

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit
P0039126	ACI001-VC	1	1	Net 30	M4140H-R1.000	4140 round bar 1.00 : AISI 4140H ROUND BAR PER AISI4140OR ASTM A304-02/A-434-BC/-A193-03- GRADE B7/A29-03/- A322-91 OR UNS# G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI				12	3/7/2018	10		S048645	Stock	3/7/2018	\$ 4.66 / ft
		2			M304B0.500X6.000	304 Bar 0.500 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft				6		6		S048646	Stock	3/7/2018	\$ 45.49 / ft
		3			M304B0.625X6.000	304 Bar 0.625 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft						6		S048647	Stock	3/7/2018	\$ 55.83 / ft
		4			M304S11GA	304/316 0.125 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240				96		96		S048648	Stock	3/7/2018	\$ 12.23 / sf
		5			M304S18GA	304/316 .050 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240				64		64		S048649	Stock	3/7/2018	\$ 5.36 / sf
		6			M304S16GA	304/316 Sheet .063 : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf				192		192		S048650	Stock	3/7/2018	\$ 6.51 / sf
		7			M304S20GA	304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf				96		96		S048651	Stock	3/7/2018	\$ 3.91 / sf
		8			M304R5.500	304 SS Round bar 5.500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				8		8		S048652	Stock	3/7/2018	\$ 310.63 / ft
		9			M304R0.625	304 SS Round bar 0.625 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				24		26		S048653	Stock	3/7/2018	\$ 2.66 / ft
		12			MT-A513-T-1.000W0.120	A513 Seamless Alloy Steel Round Tubing 1"dia. x 0.120" Wall				20		23		S048654	Stock	3/7/2018	\$ 2.47 / ft
		13			M6061T6B2.000X01.250	6061 T6 Bar 2.00 X 1.25 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft				12		12		S048655	Stock	3/7/2018	\$ 10.11 / ft

PO No	Supplier	Line Item No	Ref No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit
		14			M6061T6B0.750X04.000	6061-T6 Bar .750 X 4.00 : MATERIAL: 6061-T6/T61/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft						12		S048656	Stock	3/7/2018	\$ 10.43 / ft
		16			M304B0.750X2.500	304 Bar .750 X 2.50 : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft				36		36		S048657	Stock	3/7/2018	\$ 25.24 / ft
		17			M6061T6S.050	6061-T6 .050 Sheet : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf				96		96		S048658	Stock	3/7/2018	\$ 3.31 / sf
		18			M6061T6S.250	6061T6 Sheet .250 : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf				32		32		S048659	Stock	3/7/2018	\$ 12.30 / sf
		19	2		M1018R0.375	1010-1025 Round Bar .375 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108				12	3/8/2018	12		S048617	Stock	3/7/2018	\$ 0.50 / ft
		20	1		M1018B1.000X1.000	1010-1025 Steel Bar 1.000 X 1.000 : MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570 OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W					3/7/2018	12		S048661	Stock	3/7/2018	\$ 3.60 / ft
										Total:	736		739				

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## DELIVERY - CLIENT

Copy

CO00075982

ACIER  
OUELLETTE  
INC

## ACIER OUELLETTE INC.

935, Boul. du Hâvre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CLI0001056

Date

2018/02/27

Delivery date

2018/03/06

Your order N°

39126

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

## Billed to

DART AEROSPACE LTD

1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

## Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route

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Page

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Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
1 ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 <i>1 X 10' HEAT: 177569</i>	32.04	12.00	PI_\$CLB				<i>140</i>		<i>10</i>		<i>DAS 11 9-30</i>
COUPE A LA SCIE SCIE 1		1.00	UN								MAR 07 2018
2 FLAT SS 1/2 X 6 SS304 RANDOM NS FSS-126-V 9086 <i>1 X 6' HEAT: 600J</i>	61.20	6.00	PI_\$CLB		<i>14</i>		<i>6</i>				<i>DAS 11 9-30</i>
AC13907-SUP-05/03					<i>6</i>						MAR 07 2018
3 PLATE SS 5/8 SS304 HRAP RANDOM NS PSS-58-V 9133 <i>1 X 6' HEAT: 702625E</i>	160.99	6.00	PI2_\$CLB		<i>14</i>		<i>6</i>				<i>DAS 11 9-30</i>
AC13907-SUP-05/03					<i>6</i>						MAR 07 2018

NIR : R-109516-6

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**ACIER OUELLETTE INC.**

935, Boul. du Havre  
 Salaberry de Valleyfield (Québec) J6S 5L1  
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 Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Billed to**

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2

**Page**

Instruction F-M

**Delivery Route**

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Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
4 SHEET SS 11G SS304-2B (4 X 8) FESS-11G483042B 3402 <i>3 X 4' X 8' HEAT: 459P</i>	504.00	96.00	PI2_\$CLB		3+		⑤ 96 <sup>PI2</sup>				DAS 11 9-89
5 SHEET SS 18G SS304-2B (4 X 8) FESS-18G483042B 3425 <i>2 X 4' X 8' HEAT: 17513C03</i>	134.40	64.00	PI2_\$CLB		2+		③ 64 <sup>PI2</sup>				DAS 11 9-89
6 SHEET SS 16G SS304-2B (4 X 8) FESS-16G483042B 3419 <i>6 X 4' X 8' HEAT: 514212</i>	504.00	192.00	PI2_\$CLB		6+		④ 192 <sup>PI2</sup>				DAS 11 9-89
7 SHEET SS 20G SS304-2B (4 X 8) FESS-20G483042B 3430 <i>3 X 4' X 8' HEAT: 853274</i>	150.72	96.00	PI2_\$CLB		3+		② 96 <sup>PI2</sup>				DAS 11 9-89

NIR : R-109516-6

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**ACIER OUELLETTE INC.**

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 Salaberry de Valleyfield (Québec) J6S 5L1  
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**Customer N°**

CLI0001056

**Date**

2018/02/27

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**Your order N°**

39126

**Processed by**

Josianne Bourdon

**Salesman**
**Carrier**

OUELLETTE VALLEYFIELD

**Credit Terme**

Net 30 Days

**Billed to**

DART AEROSPACE LTD

 1270 , ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Page**

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**Instruction F-M**
**Delivery Route**

5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
8 ROUND SS 5 1/2 304 NS RSS-512 10145 <i>1 X 8' HEAT: 41257 AC13908-MM-28/02</i>	646.24	8.00	PI_CLB		178		8				DAS 14 9-30
9 ROUND SS 5/8 304 (R) * RSS-58 5777 <i>2 X 12' R/L HEAT: 439067</i>	25.03	24.00	PI_CLB		2X36		26				DAS 14 9-30
10 TUBE MEC 0.625 OD X .095 (R) * TME-0625095 6763 <i>1 X 20' R/L HEAT: 15D2317</i>	10.76	20.00	PI_CPI		1X 24		?				
TRANSIT ST-JEROME LE 28/02											

NIR : R-109516-6

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**ACIER OUELLETTE INC.**

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 Salaberry de Valleyfield (Québec) J6S 5L1  
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 Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Billed to**

DART AEROSPACE LTD

 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Customer N°**

CLI0001056

**Date**

2018/02/27

**Delivery date**

2018/03/06

**Your order N°**

39126

**Processed by**

Josianne Bourdon

**Salesman**
**Carrier**

OUELLETTE VALLEYFIELD

**Credit Terme**

Net 30 Days

**Instruction F-M**
**Delivery Route**

5

**Page**

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Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
12 TUBE MEC 0.750 OD X .095 (R) * TME-0750095 8163	13.30	20.00	PI_\$CPI		10 238		7				
1 X 20' R/L HEAT: 1502800											
TRANSIT ST-JEROME LE 28/02											
14 TUBE MEC 1.000 OD X .120 (R) * TME-1000120 6505	22.56	20.00	PI_\$CPI		1x2311		23				
1 X 20' R/L HEAT: D37954											
15 FLAT ALU 1 1/4 X 2 6061-T6 * FAL-1142 2456	35.28	12.00	PI_\$CLB		1x12		12				
1 X 12' HEAT: 3B5790											

NIR : R-109516-6

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Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

## Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

## Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

## Instruction F-M

## Delivery Route

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## Customer N°

CLI0001056

## Date

2018/02/27

## Delivery date

2018/03/06

## Your order N°

39126

## Processed by

Josianne Bourdon

## Salesman

## Carrier

OUELLETTE VALLEYFIELD

## Credit Terme

Net 30 Days

## Page

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Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
16 FLAT ALU 3/4 X 4 6061-T6 * FAL-344 2596 <i>1 X 12' HEAT: 70740</i>	42.29	12.00	PI_\$CLB				12				DAT 31 9-35
17 FLAT SS 3/4 X 2 1/2 SS304 RANDOM NS FSS-34212-V 8747 <i>3 X 12' R/L HEAT: 26600 AC13997-MM-05-03</i>	229.50	36.00	PI_\$CLB				36				DAT 31 9-35
18 ALU SHEET .051 (16G) 6061-T6 (4 X 12) FEAL-0514126061 3145 <i>2 X 4' X 12' HEAT: 32115/01 TRANSIT ST-JEROME LE 28/02</i>	68.93	96.00	PI2_\$CLB				96				DAT 31 9-35

NIR : R-109516-6

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 Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Billed to**

DART AEROSPACE LTD

 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Instruction** F-M

**Delivery Route**

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**Customer N°**

CLI0001056

**Date**

2018/02/27

**Delivery date**
**2018/03/06**
**Your order N°**

39126

**Processed by**

Josianne Bourdon

**Salesman**
**Carrier**

OUELLETTE VALLEYFIELD

**Credit Terme**

Net 30 Days

**Page**

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Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
20 ALU PLATE 1/4 6061-T651 (4 X 8) PAL-14486061 4242 <i>1 X 4' X 8' HEAT: 16-39426053</i>	117.12	32.00	PI2-\$CLB		<i>1X4X8'</i>		<i>① 32</i>				<i>MAR 07 2018</i>
21 ROUND CR 3/8 1018 (R) * RCR-38 5337 <i>1 X 12' R/L HEAT: 41776 GM</i>	4.51	12.00	PI-\$CLB		<i>1X12'</i>		<i>12</i>				<i>MAR 07 2018</i>
22 SQUARE CR 1 1018 (R) * CCR-1 1813 <i>1 X 12' R/L HEAT: 41198 G</i>	40.80	12.00	PI-\$CLB		<i>1X12'</i>		<i>12</i>				<i>MAR 07 2018</i>

**Total Weight (Lbs) :** 2 803.67

**NIR :** R-109516-6

**Conditions :**

All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :	Verified By :
<i>CLMH</i>	

Delivered By :	Time

Customer's Signature	Y	M	D

**Total (\$CAD)**



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**PURCHASE ORDER  
PO039126**

**Supplier:** ACI001-VC  
Acer Ouellette Inc.  
935 Boul. Du Havre  
Valleyfield  
QC  
J6S 5L1 Canada  
Phone: 800 667 4248  
Fax: 450 377 5696

**PO No:** PO039126

**PO Date:** 2/26/18

**Due Date:** 3/2/18

**Purchase Order  
Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
Phone: clavoie@dartaero.com

**E-MAILED**

**FEB 27 2018**

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:** quotation no: sou0087982

**Items**

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	M4140H-R1.000		4140 round bar 1.00 : AISI 4140H ROUND BAR PER AISI4140OR ASTM A304-02/A-434- BC/A193-03-GRADE B7/A- A29-03/A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI	Firmed	3/2/18	12 ft	0 ft	12 ft	\$4.664/ft	\$55.97
2	M304B0.500X6.000		304 Bar 0.500 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	6 ft	0 ft	6 ft	\$45.48666/ft	\$272.92
3	M304B0.625X6.000		304 Bar 0.625 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	6 ft	0 ft	6 ft	\$55.83333/ft	\$335.00
4	M304S11GA		304/316 0.125 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240	Firmed	3/2/18	96 sf	0 sf	96 sf	\$12.2298/sf	\$1,174.06

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
5	M304S18GA		304/316 .050 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	3/2/18	64 sf	0 sf	64 sf	\$5.355/sf	\$342.72
6	M304S16GA		304/316 Sheet .063 : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	3/2/18	192 sf	0 sf	192 sf	\$6.508625/sf	\$1,249.66
7	M304S20GA		304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	3/2/18	96 sf	0 sf	96 sf	\$3.9085416/sf	\$375.22
8	M304R5.500		304 SS Round bar 5.500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	8 ft	0 ft	8 ft	\$310.625/ft	\$2,485.00
9	M304R0.625		304 SS Round bar 0.625 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	24 ft	0 ft	24 ft	\$2.6591666/ft	\$63.82
10	MT-A513-T-0.625W0.095		A513 Seamless Alloy Steel Round Tubing 0.625"dia. x 0.095" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.9595/ft	\$59.19
11	MT-A513-T-0.750W0.095		A513 Seamless Alloy Steel Round Tubing 0.75"dia. x 0.095" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.4095/ft	\$48.19
12	MT-A513-T-1.000W0.120		A513 Seamless Alloy Steel Round Tubing 1"dia. x 0.120" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.4695/ft	\$49.39
13	M6061T6B2.000X01.250		6061-T6 Bar 2.00 X 1.25 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$10.1125/ft	\$121.35

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Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Receivnd Quantity	Balance	Unit Price (CAD)	Extended Price
14	M6061T6B0.750X04.000		6061-T6 Bar .750 X 4.00 : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ- A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$10.429166/ft	\$125.15
15	M6061T6B1.000X1.750		6061T6 Bar 1.000 X 1.750 : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ- A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$20.16666/ft	\$242.00
16	M304B0.750X2.500		304 Bar .750 X 2.50 : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	36 ft	0 ft	36 ft	\$25.241944/ft	\$908.71
17	M6061T6S.050		6061-T6 .050 Sheet : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf	Firmed	3/2/18	96 sf	0 sf	96 sf	\$3.3095833/sf	\$317.72
18	M6061T6S.250		6061T6 Sheet .250 : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf	Firmed	3/2/18	32 sf	0 sf	32 sf	\$9.92875/sf	\$317.72
19	M1018R0.313		1018-1025 Round Bar .313 : MATERIAL: AISI 1018- 1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$0.4958333/ft	\$5.95
20	M1018B1.000X1.000		1010-1025 Steel Bar 1.000 X 1.000 : MATERIAL: AISI 1010- 1025 OR ASTM A36/A366/A569/A570 OR OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W	Firmed	3/2/18	12 ft	0 ft	12 ft	\$3.6025/ft	\$43.23

Line Item	Part	Supplier Part No	Description	Items							Unit Price (CAD)	Extended Price					
				Status	Due Date	Order Quantity	Received Quantity	Balance									
Grand Total: \$8,592.96																	
<b>Order Notes</b>																	
Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A026 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents  A048 counterfeit parts avoidance, detection, mitigation and disposition program  A049 supplier awareness																	
Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit <a href="http://www.dartaerospace.com">www.dartaerospace.com</a> for further explanation.																	



Plex 2/26/18 2:10 PM dart.lavoie.chantal

**Quotation**
**SOU0087982**
**Billed to**

 DART AEROSPACE LTD  
 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Product N° and description	Weight	Qty U/M	Qty U/M	Price	Pcs Nb	Price	Amount
FLAT ALU 1 X 2 6061-T6 * FAL-12 2497 1 X 20" STOCK	48.00	20.00 PI-\$CLB	20.00 PI		1.00	149.260	149.26
ALU PLATE 1 6061-T651 RANDOM PAL-16061-V 4249 1 X 15" X 144" 4-5 DAYS	216.60	15.00 PI2-\$CLB	15.00 PI2		1.00	1 052.570	1 052.57
ALU PLATE 1 6061-T651 RANDOM PAL-16061-V 4249 1 X 16" X 144" 4-5 DAYS	231.04	16.00 PI2-\$CLB	16.00 PI2		1.00	1 122.740	1 122.74
FLAT ALU 3/4 X 6 6061-T6 * FAL-346 2601 1 X 12" STOCK	63.44	12.00 PI-\$CLB	12.00 PI		1.00	218.850	218.85
FLAT ALU 1 1/4 X 2 6061-T6 * FAL-1142 3456 1 X 42" STOCK	35.28	12.00 PI-\$CLB	12.00 PI		1.00	121.350	121.35
ALU SHEET .051 (16G) 6061-T6 (4 X 12) FEAL-0514126061 3145 2 X 4' X 12' 2-3 DAYS	68.93	96.00 PI2-\$CLB	2.00 UN		2.00	158.860	317.72
ALU PLATE 1/4 6061-T651 (4 X 8) PAL-14486061 4242 1 X 4' X 8" STOCK	117.12	32.00 PI2-\$CLB	1.00 UN		1.00	393.460	393.46
ALU-SHEET .081 (12G) 6061-T6 (4 X 12) FEAL-0814126061 3195 2 X 4' X 12' 2-3 DAYS	109.54	96.80 PI2-\$CLB	2.08 UN		2.00	252.455	504.91
ALU PLATE 5/16 6061-T651 (4 X 12) PAL-5164126061 4289 1 X 4' X 12' 2-3 DAYS	216.96	48.00 PI2-\$CLB	1.00 UN		1.00	974.040	974.04
ROUND CR 3/8 1018 (R) * RCR-38 5337 1 X 12' R/L STOCK	4.51	12.00 PI-\$CLB	12.00 PI		1.00	5.950	5.95

Date :

Next Page...

**Quotation**
**SOU0087982**
**Billed to**

 DART AEROSPACE LTD  
 1270 , ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Customer №** CLI0001056

**Date** 2018/02/22

**Revision №** 0

**Prices valid until** 2018/03/01

**Your Order №**
**Processed by** Josianne Bourdon

**Salesman** JOSIANNE

**Carrier** OUELLE SDV

**Credit Terms** Net 30 Days

**Page** 5

Product № and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
SQUARE CR 1 1018 (R) * CCR-1 1813 1 X 12' R/L STOCK	40.80	12.00	PI-\$CLB	12.00	PI		1.00	43.230	43.23
FLAT 17-4 PH H900 1/4 X 4 N 4 X 12' 2 MONTH OFFER SOL ANN À 564 HRAP	0.00	4.00	UN	4.00	UN		4.00	296.000	1 184.00
RONDE 17-4 H1150 1 3/4" DIA N 1 X 12' R/L 2-3 WEEKS	0.00	1.00	UN	1.00	UN		1.00	612.000	612.00
RONDE 17-4 H1150 2 3/4" N 1 X 12' R/L 2-3 WEEKS	0.00	1.00	UN	1.00	UN		1.00	1 476.000	1 476.00
ROUND SS 3/4 303 (R) * RSS-34303 5761 8 X 12' R/L STOCK	144.19	96.00	PI-\$CLB	96.00	PI		8.00	58.208	465.67
FLAT-O1 1/4 X 3/8 N 4 X 3'	0.00	4.00	UN	4.00	UN	0.00	4.00		0.00
FLAT'ALU 3/4 X 6 6061-T6 * FAL-346 2601 1 X 12' STOCK	63.44	12.00	PI-\$CLB	12.00	PI		1.00	218.850	218.85
SURCHARGE ENERGETIQUE FRAIS_ENERGETIQUE			\$						3.95

**Total Weight (Lbs)** 3 842.11

**Important**

This offer is based on availability and current pricing conditions that may be revised upon reception of the order.

This offer is subject and conditional to credit approval.

Approved and Accepted by : \_\_\_\_\_

Date :

**Sub-total** 20 190.05

TVH-13 · 2624.71

**Total (\$CAD)**

22 814.76

**Quotation**
**SOU0087982**
**Billed to**

 DART AEROSPACE LTD  
 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Customer N°** CLI0001056

**Date** 2018/02/22

**Revision N°** 0

**Prices valid until** 2018/03/01

**Your Order N°**
**Processed by** Josianne Bourdon

**Salesman** JOSIANNE

**Carrier** OUELLE SDV

**Credit Terms** Net 30 Days

**Page** 1

Product N° and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
PLAT 4140 1" X 1 1/4" HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	140.000	140.00
PLAT 4140 1 1/4" X 1 1/2" HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	180.000	180.00
PLAT 4140 1 1/2" X 2" HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	237.000	237.00
ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 1 X 10' STOCK COUPE A LA SCIE SCIE 1	26.70	10.00	PI_\$CLB	10.00	PI		1.00	46.640	46.64
HEXAGONE AL. 2024-T4 5/16" N 1 X 12' 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	65.000	65.00
FLAT SS 1/2 X 6 SS304 RANDOM NS FSS-126-V 9086 1 X 6' 2-3 DAYS	61.20	6.00	PI_\$CLB	6.00	PI		1.00	272.920	272.92
PLAT SS304 5/8 X 6 N 1 X 6' 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	335.000	335.00
FLAT SS 3/4 X 2 1/2 SS304 RANDOM NS FSS-34212-V 8747 3 X 12' R/L 2-3 DAYS	229.50	36.00	PI_\$CLB	36.00	UN		3.00	302.903	908.71
FLAT SS 3/4 X 1 1/2 SS304 NS FSS-34112 9547 1 X 6' 2-3 DAYS	22.98	6.00	PI_\$CLB	6.00	UN		1.00	192.100	192.10

Date :

Next Page...

**Quotation**
**SOU0087982**
**Billed to**

 DART AEROSPACE LTD  
 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Customer N°** CLI0001056

**Date** 2018/02/22

**Revision N°** 0

**Prices valid until** 2018/03/01

**Your Order N°**
**Processed by** Josianne Bourdon

**Salesman** JOSIANNE

**Carrier** OUELLE SDV

**Credit Terms** Net 30 Days

**Page** 2

Product N° and description	Weight	Qty U/M	Qty U/M	Price	Pcs Nb	Price	Amount
SHEET SS 11G SS304-2B (4 X 8) FESS-11G483042B 3402 3 X 4' X 8' STOCK	504.00	96.00 PI2_\$CLB	3.00 UN		3.00	391.356	1 174.07
SHEET SS 18G SS304-2B (4 X 8) FESS-18G483042B 3425 2 X 4' X 8' STOCK	134.40	64.00 PI2_\$CLB	2.00 UN		2.00	171.360	342.72
SHEET SS 16G SS304-2B (4 X 8) FESS-16G483042B 3419 6 X 4' X 8' STOCK	504.00	192.00 PI2_\$CLB	6.00 UN		6.00	208.278	1 249.67
SHEET SS 20G SS304-2B (4 X 8) FESS-20G483042B 3430 3 X 4' X 8' STOCK	150.72	96.00 PI2_\$CLB	3.00 UN		3.00	125.073	375.22
ROND SS304 5 1/2" DIA N 1 X 8' 2-3 DAYS	0.00	1.00 UN	1.00 UN		1.00	2 485.000	2 485.00
ROUND SS 5/8 304 (R) * RSS-58 5777 2 X 12' R/L STOCK	25.03	24.00 PI_\$CLB	24.00 PI		2.00	31.910	63.82
TUBE MEC 0.625 OD X .095 (R) * TME-0625095 6763 1 X 20' R/L 2-3 DAYS	10.76	20.00 PI_\$CPI	20.00 PI		1.00	59.190	59.19
TUBE MEC 0.750 OD X .095 (R) * TME-0750095 8163 1 X 20' R/L 2-3 DAYS	13.30	20.00 PI_\$CPI	20.00 PI		1.00	48.190	48.19
TUBE MECH. 0.75 X .083 (R) N 1 X 20' R/L 2-3 DAYS	0.00	1.00 UN	1.00 UN		1.00	69.000	69.00
TUBE MEC 1.000 OD X .120 (R) * TME-1000120 6505 1 X 20' R/L STOCK	22.56	20.00 PI_\$CPI	20.00 PI		1.00	49.390	49.39

Date :

Next Page...

**Quotation**
**SOU0087982**
**Billed to**

 DART AEROSPACE LTD  
 1270, ABERDEEN ST.  
 HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Attn : CHANTAL LAVOIE Tél.: 613-632-5200

**Customer N°** CLI0001056

**Date** 2018/02/22

**Revision N°** 0

**Prices valid until** 2018/03/01

**Your Order N°**
**Processed by** Josianne Bourdon

**Salesman** JOSIANNE

**Carrier** OUELLE SDV

**Credit Terms** Net 30 Days

**Page** 3

Product N° and description	Weight	Qty U/M	Qty U/M	Price	Pcs Nb	Price	Amount
ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 1 X 20' R/L STOCK	53.40	20.00 PI_\$CLB	20.00 PI		1.00	83.280	83.28
FLAT ALU 1/2 X 12 6061-T6 * FAL-1212 7447 2 X 12' STOCK	169.39	24.00 PI_\$CLB	24.00 PI		2.08	276.065	552.13
FLAT ALU 1/2 X 5 6061-T6 * FAL-125 2492 2 X 12' STOCK	70.58	24.00 PI_\$CLB	24.00 PI		2.00	116.445	232.89
FLAT ALU 3/4 X 4 6061-T6 * FAL-344 2596 1 X 12' STOCK	42.29	12.00 PI_\$CLB	12.00 PI		1.00	125.150	125.15
SQUARE ALU 1 6061-T6 * CAL-1 1781 2 X 12' STOCK	28.22	24.00 PI_\$CLB	24.00 PI		2.00	38.940	77.88
AL. PLAT 1" X 1 3/4" H 1 X 12' 4-7 DAYS	0.00	1.00 UN	1.00 UN		1.00	242.000	242.00
FLAT ALU 1 X 2 6061-T6 * FAL-12 2497 2 X 20' STOCK	96.00	40.00 PI_\$CLB	40.00 PI		2.00	149.255	298.51
FLAT ALU 1 1/2 X 2 1/2 6061-T6 * FAL-112212 2439 5 X 12' STOCK	264.36	60.00 PI_\$CLB	60.00 PI		5.00	172.336	861.68
CARRE AL. 2 1/4" 6061T6 N 1 X 12' 4-7 DAYS	0.00	1.00 UN	1.00 UN		1.00	386.000	386.00
FLAT ALU 1 1/2 X 2 1/2 6061-T6 * FAL-112212 2439 1 X 12' STOCK	52.87	12.00 PI_\$CLB	12.00 PI		1.00	172.340	172.34

Date :

Next Page...

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MK18B1,000x1.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048661

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	<i>Astm A108</i>
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	<i>Hectff 411986</i>
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____
DATE: <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR  
 SPECIFICATION: MIL-S-7097 OR ASTM A108  
 PART NUMBER: M1018-R/D.DDD WHERE D.DDD = DIAMETER IN INCHES  
 OIA.  
 EG. 7/8" ROUND BAR = M1018-R0.875  
 TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE	TOLERANCE
UP TO 1.5" INCL.	+0.000/-0.002
OVER 1.5" TO 2.5" INCL.	+0.000/-0.003
OVER 2.5" TO 4.0" INCL.	+0.000/-0.004
OVER 4.0" TO 6.0" INCL.	+0.000/-0.005
OVER 6.0" TO 8.0" INCL.	+0.000/-0.006

McLEASE  
2012-09-24  
W

B	REFORMAT, ADD ASTM A108, ADD TOLERANCES	CP	12.09.05
A	NEW ISSUE	DS	01.06.12
REV.	DESCRIPTION		BY DATE
DESIGN	DS	<b>DART AEROSPACE LTD</b>	
DRAWN	CP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DR	DRAWING NO.	REV. B
MFG. APPR.	DR	M1018-R	SHEET 1 OF 1
APPROVED	DR	TITLE	SCALE
DE APPR.	DR	1018-1025 ROUND BAR	NTS
DATE	12.09.05	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018R 0.375  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126 / 15048817  
5048660

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12  
 QUANTITY INSPECTED: 12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.375 0.375  
 THICKNESS RECEIVED: 0.375 0.375  
 SHEET SIZE ORDERED: 111  
 SHEET SIZE RECEIVED: 111

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>N</u>	Astm A108
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	Heat # 41776 0-m
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY:	<u>DAS</u>	SIGNED OFF BY:	
DATE:	<u>MAR 07 2018</u>	DATE:	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR

SPECIFICATION: MIL-S-7097 OR ASTM A108

PART NUMBER: M1018-RD.DDD WHERE D.DDD = DIAMETER IN INCHES  
DIA.

EG. 7/8" ROUND BAR = M1018-R0.875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE	TOLERANCE
UP TO 1.5" INCL.	+0.000/-0.002
OVER 1.5" TO 2.5" INCL.	+0.000/-0.003
OVER 2.5" TO 4.0" INCL.	+0.000/-0.004
OVER 4.0" TO 6.0" INCL.	+0.000/-0.005
OVER 6.0" TO 8.0" INCL.	+0.000/-0.006

RELEASED  
2012-09-24  
MP

B	REFORMAT, ADD ASTM A108, ADD TOLERANCES	CP	12.09.05
A	NEW ISSUE	DS	01.06.12
REV	DESCRIPTION		
DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	CP	DRAWING NO.	REV. B
CHECKED	<i>AP</i>	M1018-R	SHEET 1 OF 1
MFG. APPR.	<i>AP</i>	TITLE	SCALE
APPROVED	<i>AP</i>	1018-1025 ROUND BAR	NTS
DE APPR.	<i>AP</i>		
DATE	12.09.05	COPYRIGHT © 2001 BY DART AEROSPACE LTD THE DOCUMENT IS PROPRIETARY AND CONFIDENTIAL. IT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304B0.750X2.500  
 DATE: MAR 07 2018

PO / BATCH NO: 039126/5048657

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 36  
 QUANTITY INSPECTED: 36  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.750  
 THICKNESS RECEIVED: 0.750  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<u>Y</u> <u>N</u>	
CORRECT FINISH	<u>Y</u> <u>N</u>	
CORROSION	<u>Y</u> <u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u> <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u> <u>N</u>	<i>Astm A276</i>
CORRECT THICKNESS	<u>Y</u> <u>N</u>	
PHOTO REQUIRED	<u>Y</u> <u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u> <u>N</u>	<i>Heat # 26600</i>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u> <u>N</u>	
CORRECT M# ON THE MATERIAL	<u>Y</u> <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<u>Y</u> <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<u>Y</u> <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>S-1</u> <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

 PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: AISI 303 NOT ACCEPTABLE)

 SPECIFICATION: *ASTM A276 OR ASTM A240*

PART NUMBER: *M304B|T.TTT|X|WW.WWW|*  
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WW.WWW" = WIDTH IN INCHES

 EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
EG. 0.5" X 12.0" PLATE = M304B0.500X12.000

RELEASED  
2010-11-30  
W

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE RELATED SPECIFICATIONS, AND EG., CHANGED TITLE FROM "304/316 BAR" TO "304/316 BAR/PLATE"	MB	10.11.25
B	REFORMAT DWG, ADD SPECS (ZN 08-1), REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	PH	05.06.10
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>PW</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>BS</i>		
CHECKED	<i>JB</i>		
MFG. APPR.	<i>JL</i>	DRAWING NO. <b>M304B</b> REV. C SHEET 1 OF 1	
APPROVED	<i>WJ</i>	TITLE <b>304/316 BAR/PLATE</b> NTS	
DE APPR.	<i>WJ</i>	DATE <b>10.11.25</b>	
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061+680,750X04.000 PO / BATCH NO.: 039126/5048656  
 DATE: MAR 07 2018

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12  
 QUANTITY INSPECTED: 12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.750  
 THICKNESS RECEIVED: 0.750  
 SHEET SIZE ORDERED: 11/4  
 SHEET SIZE RECEIVED: 11/4

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<u>Y</u> <u>N</u>	
CORRECT FINISH	<u>Y</u> <u>N</u>	
CORROSION	<u>Y</u> <u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u> <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u> <u>N</u>	<i>Astan B.221</i>
CORRECT THICKNESS	<u>Y</u> <u>N</u>	
PHOTO REQUIRED	<u>Y</u> <u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u> <u>N</u>	<i>Part # 70740</i>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u> <u>N</u>	
CORRECT M# ON THE MATERIAL	<u>Y</u> <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<u>Y</u> <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<u>Y</u> <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-09 MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221 *Day*

PART NUMBER: M6061T6B | T.TTT | X | WW.WWW |  
THICK | WIDTH |

WHERE "T.TTT" = THICKNESS IN INCHES  
"WW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1.000X12.000

**B**

D

C

B

A

D

C

B

A

**RELEASED**  
2009-09-03  
*MD*

B	REMOVE QQ-A-250/11 OPTION. REFORMAT NOTES. ADD ASTM B211/B221 (ZN D7-1)		CP	09.07.13
A	NEW ISSUE		DS	01.06.08
REV	DESCRIPTION		BY	DATE
DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA		
DRAWN	<i>PP</i>	DRAWING NO.	M6061T6B	
CHECKED	<i>PS</i>	REV. B	SHEET 1 OF 1	
MFG. APPR.	<i>MD</i>	TITLE	6061-T6 BAR	
APPROVED	<i>MD</i>	SCALE	NTS	
DATE	09.07.13	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THEIR FIRM PURCHASED FROM DART AEROSPACE LTD.		

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606146B2.000X01.250 PO / BATCH NO.: 039126/5048655  
 DATE: MAR 07 2019

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 01.250  
 THICKNESS RECEIVED: 01.250  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>(N)</u>	
CORRECT FINISH	Y <u>(N)</u>	
CORROSION	Y <u>(N)</u>	
CORRECT GRAIN DIRECTION	Y <u>(N)</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>(N)</u>	<i>Astm B221</i>
CORRECT THICKNESS	Y <u>(N)</u>	
PHOTO REQUIRED	Y <u>(N)</u>	
CORRECT REF # TO LINK CERT	Y <u>(N)</u>	<i>Heat # 3B5790</i>
CORRECT MATERIAL IDENTIFICATION	Y <u>(N)</u>	
CORRECT M# ON THE MATERIAL	Y <u>(N)</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAD</u> <u>MAR 07 2018</u>	SIGNED OFF BY: _____
DATE: <u>9-39</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221

B

PART NUMBER: M6061T6B | T.TTT | X | WW.WWW |  
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES  
"WW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1.000X12.000

RELEASED  
2009-06-03  
M

B	REMOVE QQ-A-250/11 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (ZN D7-1)		CP	09 07.13
A	NEW ISSUE		DS	01.06.08
REV	DESCRIPTION		BY	DATE
DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA		
DRAWN	<i>DS</i>			
CHECKED	<i>AS</i>	DRAWING NO.	M6061T6B	
MFG. APPR.	<i>AS</i>	REV. B		
APPROVED	<i>AS</i>	SHEET 1 OF 1		
DE APPR.	<i>AS</i>	TITLE	6061-T6 BAR	
DATE	09.07.13	SCALE	NTS	
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A513 T1,000W,120  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048654

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 23'  
 QUANTITY INSPECTED: 23'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W,120  
 THICKNESS RECEIVED: W,120  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>Astan A513</i>
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>Heat# D32954</i>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>S- MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

8 1 7 6 5 4 3 2 1

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW RELEASE	17-855	17.09.06	VM	WM
B	TYPE 5 ADDED, TEMPLATE UPDATED	17-790	17.12.13	VM	ML

D

D

## SPECIFICATION CONTROL DRAWING

C

C

PURCHASE MATERIAL: ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)

SPECIFICATION: *ASTM A513 TYPE 5*

PART NUMBER: MT-A513-T-[D.DDD]W[T.TTT]

WHERE D.DDD IS OUTSIDE DIAMETER IN INCHES

WHERE T.TTT IS WALL THICKNESS IN INCHES

EG. 3/4" ROUND TUBING WITH .120" WALL THICKNESS = MT-A513-T-0.750W0.120

B

B

**DART AEROSPACE** Hemelbury, Ontario, Canada

**ASTM A513 TYPE 5 (1020/1026) ALLOY STEEL ROUND TUBING (DOM)**

PART NO.	REV.
MT-A513-T	B
TOOL NO.	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: XXX ± .005 FRACTIONS ± 1/8 DRAWN BY: VM 12/13/2017 CHECKED BY: ML 12/20/2017 APPROVED BY: ML 12/20/2017	
TOLERANCES: XXX ± .005 FRACTIONS ± 1/8 ANGLES: ± .5° SURFACE ROUGHNESS: ± .1	
MFG REVIEW BY: DP 12/20/2017	
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8 1 7 6 5 4 3 2 1

1

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R0.625  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/6048653

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 26  
 QUANTITY INSPECTED: 26  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625  
 THICKNESS RECEIVED: 0.625  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>Action A276</i>
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>Heat # 439067</i>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> DATE: <u>MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

**A** SPECIFICATION: ASTM A276

PART NUMBER: M304RD.DDD  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

**RELEASED**  
09/03/25/100

B	REFORMAT DWG. ADD SPECS (ZN D6-1), REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>AJS</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	<i>99</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>99</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>M</i>	M304R	SHEET 1 OF 1
APPROVED	<i>M</i>	TITLE	SCALE
DE APPR.	<i>M</i>	304/316 ROUND BAR	NTS
DATE	09.07.15	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT DART AEROSPACE LTD'S PRIOR WRITTEN CONSENT.	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R5.500  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/3048652

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 8  
 QUANTITY INSPECTED: 8  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.500  
 THICKNESS RECEIVED: 5.500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>As per A276</i>
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	<i>Heat # 41257</i>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-5</u> <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

**B** SPECIFICATION: ASTM A276

PART NUMBER: M304R D.DDD  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

RELEASED  
01/08/25/1400

B	REFORMAT DWG. ADD SPECS (ZN D6-1), REF PAR 08-020A	CP	08.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	<u>AJS</u>	DART AEROSPACE LTD	
DRAWN	<u>99</u>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<u>1</u>	DRAWING NO.	REV. B
MFG. APPR.	<u>MJ</u>	M304R	SHEET 1 OF 1
APPROVED	<u>MJ</u>	TITLE	SCALE
DE APPR.	<u>MJ</u>	304/316 ROUND BAR	NTS
DATE	09.07.15	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD AND IS SUPPLIED UNDER THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPY OR DISTRIBUTE PART OR ALL OF ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H05.250  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048659

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 32 Pcs  
 QUANTITY INSPECTED: 32 Pcs  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .250  
 THICKNESS RECEIVED: .250  
 SHEET SIZE ORDERED: 4X8  
 SHEET SIZE RECEIVED: 4X8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	SG-A-250/11
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Heat# 16-39426053
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>71</u>	SIGNED OFF BY: _____
DATE: <u>9-39</u> <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T62 ALUMINUM SHEET

SPECIFICATION: *QQ-A-250/11 OR AMS-QQ-A-250/11*  
OR AMS 4025 OR AMS 4027  
OR ASTM B209

PART NUMBER: M6061T6S | XXX |  
THK |

WHERE ".XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M6061T6S.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

RELEASED  
2009-09-10

*MP*

B	REFORMAT DWG. ADD B209 SPEC (ZN DB-1), REF PAR 08-020A	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV.	DESCRIPTION		
DESIGN	<i>MP</i>	DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		M6061T6S	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR.		6061-T6 SHEET SPEC	NTS
DATE	09.07.13	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL. IT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6S.050  
 DATE: MAR 07 2018

PO / BATCH NO: 039126/5048658

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 96 P/2  
 QUANTITY INSPECTED: 96 P/2  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .050  
 THICKNESS RECEIVED: .050  
 SHEET SIZE ORDERED: 4X12  
 SHEET SIZE RECEIVED: 4X12

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	QQ-A-250/11
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Heat# 32115701
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-89 MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

8 7 6 5 4 3 2 1

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T62 ALUMINUM SHEET

SPECIFICATION: *QQ-A-250/11 OR AMS-QQ-A-250/11*  
*OR AMS 4025 OR AMS 4027*  
*OR ASTM B209*

**B**PART NUMBER: M6061T6S | XXX |  
THK |

WHERE ".XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M6061T6S.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

D

D

C

C

B

B

A

A

**RELEASED**  
 2009-09-10

*MAP*

B	REFORMAT DWG, ADD B209 SPEC (ZN D8-1), REF PAR 08-020A	CP	09 07 13
A	NEW ISSUE	DS	01 06 08
REV	DESCRIPTION	BY	DATE
DESIGN	<i>MAP</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	<i>MAP</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>MAP</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>MAP</i>	M6061T6S	SHEET 1 OF 1
APPROVED	<i>MAP</i>	TITLE	SCALE
DE APPR.	<i>MAP</i>	6061-T6 SHEET SPEC	NTS
DATE	09.07.13	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED / OR ANY PORTION OF, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN APPROVAL FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045206A  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048651

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 96 p.2  
 QUANTITY INSPECTED: 96 p.2  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 206A  
 THICKNESS RECEIVED: 206A  
 SHEET SIZE ORDERED: 4x8  
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORRECT FINISH	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORROSION	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/>	N <input type="radio"/> Asme SA 240
CORRECT THICKNESS	Y <input checked="" type="radio"/>	N <input type="radio"/>
PHOTO REQUIRED	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/>	N <input type="radio"/> Heat # 853274
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/>	N <input type="radio"/>
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/>	N <input type="radio"/>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/>	N <input type="radio"/>
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/>	N <input type="radio"/>

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>11</u>	SIGNED OFF BY: _____
DATE: <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION: MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH	DART M-NUMBER IDENTIFIER
UNPOLISHED No. 1	1P
UNPOLISHED No. 2D	2D
UNPOLISHED No. 2B	NONE
POLISHED No. 3	3P
POLISHED No. 4	4P
BUFFED No. 6	6P
BUFFED No. 7	7P
BUFFED No. 8	8P

PART NUMBER: M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

**RELEASED**

2015 FEB 04

*ECN 15-522 4*

D	ADDED GAUGES 0-7.		
C	DEFINED FINISH OPTION (ZN C8) AND EXAMPLE OF MATERIAL P/N WITH FINISH OTHER THAN 2B (ZN B5).	AJS	15.01.06
B	REFORMAT DWG, ADD ASTM/ASME SPECS (ZN D8-1), ADD GAUGE REF (C8-1). REF PAR 08-020A	MB	12.09.20
A	NEW ISSUE	CP	09.06.01
REV.	DESCRIPTION	DS	01.09.24
DESIGN	DS	<b>DART AEROSPACE LTD</b>	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	
MFG. APPR.		M304S	REV. D
APPROVED		TITLE	SHEET 1 OF 1
DE APPR.		304/316 SS SHEET	NTS
DATE	15.01.06	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045166A  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048650

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 192<sup>PI</sup>2  
 QUANTITY INSPECTED: 192<sup>PI</sup>2  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 16GA  
 THICKNESS RECEIVED: 16GA  
 SHEET SIZE ORDERED: 4X8  
 SHEET SIZE RECEIVED: 4X8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/>	(N)
CORRECT FINISH	Y <input checked="" type="radio"/>	N
CORROSION	Y <input checked="" type="radio"/>	(N)
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/>	N
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/>	N <u>ASTM A240</u>
CORRECT THICKNESS	Y <input checked="" type="radio"/>	N
PHOTO REQUIRED	Y <input checked="" type="radio"/>	(N)
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/>	N <u>Heat # 514212</u>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/>	N
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/>	N
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/>	(N)
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/>	(N)

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-39 MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION: **MIL-S-5059**  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
**OR ASTM A240**  
OR ASME SA240

FINISH:

FINISH	DART M-NUMBER IDENTIFIER
UNPOLISHED No. 1	1P
UNPOLISHED No. 2D	2D
UNPOLISHED No. 2B	NONE
POLISHED No. 3	3P
POLISHED No. 4	4P
BUFFED No. 6	6P
BUFFED No. 7	7P
BUFFED No. 8	8P

PART NUMBER: M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325



**RELEASED**

2015 FEB 04

ECN 15-522 4

D	ADDED GAUGES 0-7.		AJS	15.01.06
C	DEFINED FINISH OPTION (2N C8) AND EXAMPLE OF MATERIAL P/N WITH FINISH OTHER THAN 2B (ZN B5)		MB	12.09.20
B	REFORMAT DWG, ADD ASTM/ASME SPEC'S (ZN D8-1), ADD GAUGE REF (C8-1), REF PAR 08-020A		CP	09.06.01
A	NEW ISSUE		DS	01.09.24
REV	DESCRIPTION		BY	DATE
DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA		
DRAWN	AS	DRAWING NO. <b>M304S</b>		
CHECKED		REV. D SHEET 1 OF 1		
MFG. APPR.		TITLE 304/316 SS SHEET		
APPROVED		SCALE NTS		
DE APPR.		DATE 15.01.06		

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WRITTEN PERMISSION FROM DART AEROSPACE LTD

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045186A  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048649

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 64 Pcs  
 QUANTITY INSPECTED: 64 Pcs  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 186A  
 THICKNESS RECEIVED: 186A  
 SHEET SIZE ORDERED: 4x8  
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	ASME SA240
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Heat # 62573C03
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY:	<u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE:	<u>9-09</u> <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION: MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH	DART M-NUMBER IDENTIFIER
UNPOLISHED No. 1	1P
UNPOLISHED No. 2D	2D
UNPOLISHED No. 2B	NONE
POLISHED No. 3	3P
POLISHED No. 4	4P
BUFFED No. 6	6P
BUFFED No. 7	7P
BUFFED No. 8	8P

PART NUMBER: M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325



**RELEASED**

2015 FEB 04

ECN 15-122 4

D	ADDED GAUGES 0-7.		AJS	15.01.06
C	DEFINED FINISH OPTION (2N C8) AND EXAMPLE OF MATERIAL P/N WITH FINISH OTHER THAN 2B (2N B5)		MB	12.09.20
B	REFORMAT DWG, ADD ASTM/ASME SPECS (2N D8-1), ADD GAUGE REF (C8-1), REF PAR 08-020A		CP	09.06.01
A	NEW ISSUE		DS	01.09.24
REV.	DESCRIPTION		BY	DATE
DESIGN	DS	DART AEROSPACE LTD		
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA		
CHECKED		DRAWING NO.		
MFG. APPR.		M304S		REV. D
APPROVED		TITLE		SHEET 1 OF 1
DE APPR.		304/316 SS SHEET		NTS
DATE	15.01.06	COPYRIGHT © 2001 BY DART AEROSPACE LTD		
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045116A  
 DATE: MAR 07 2018

PO / BATCH NO.: P0039126/5048648

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 96 Pcs  
 QUANTITY INSPECTED: 96 Pcs  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 116A  
 THICKNESS RECEIVED: 116A  
 SHEET SIZE ORDERED: 4X8  
 SHEET SIZE RECEIVED: 4X8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	Astm A240
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Hert #459P
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-89 MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION:

MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASIM A240  
OR ASME SA240

FINISH:

DART M-NUMBER  
IDENTIFIER

UNPOLISHED	No. 1
UNPOLISHED	No. 2D
UNPOLISHED	No. 2B
UNPOLISHED	None
POLISHED	No. 3
POLISHED	3P
POLISHED	No. 4
POLISHED	4P
BUFFED	No. 6
BUFFED	6P
BUFFED	No. 7
BUFFED	7P
BUFFED	No. 8
BUFFED	8P

PART NUMBER:

M304S TT GA #P  
[GA]

WHERE "TT" = GAUGE THICKNESS  
WHERE "#" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA

EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK.	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

**RELEASED**

2015 FEB 04  
ECD 15-522 47

D	ADDED GAUGES & T.	BY	DATE
C	DEFINED FINISH OPTION (2B IN CB) AND EXAMPLE OF MATERIAL FIN WITH FINISH OTHER THAN 2B (2N 35).	AJS	16.01.06
B	REFORMAT DWG. AND ASTM/AIASME SPECS (2N D8-1). ADD GAUGE REF (C84). REF FAR 08-020A	MB	12.09.20
A	NEW ISSUE	CP	09.06.01
REV	DESCRIPTION	DS	01.09.24
DESIGN	DS	D	<b>DART AEROSPACE LTD</b>
DRAWN	A/S		HAWKESBURY, ONTARIO, CANADA
CHECKED			DRAWING NO.
MFG. APPR.			M304S
APPROVED			REV D
DE APPR.			304/316 SS SHEET
DATE	15.01.06		SCALE

NTS

SHEET 1 OF 1

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DATE 15-522 BY DART AEROSPACE LTD

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304BC, 625X6,000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048647

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 6  
 QUANTITY INSPECTED: 6  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625  
 THICKNESS RECEIVED: 0.625  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>(N)</u>	
CORRECT FINISH	<u>(Y)</u> N	
CORROSION	Y <u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u> N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u> N	<i>Astm A240</i>
CORRECT THICKNESS	<u>(Y)</u> N	
PHOTO REQUIRED	Y <u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u> N	<i>Heat # 702625E</i>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u> N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>11</u> <u>9-89</u>	SIGNED OFF BY: _____
DATE: <u>MAR 07 2018</u>	DATE: _____

**Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in**

# SPECIFICATION CONTROL DRAWING

**C** PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: AISI 303 NOT ACCEPTABLE)

**C** SPECIFICATION: ASTM A276 OR ASTM A240 *XL*

PART NUMBER: M304B|T.TTT|X|WW.WWW|  
|THICK| |WIDTH|

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WW.WWW" = WIDTH IN INCHES

**C** EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
EG. 0.5" X 12.0" PLATE = M304B0.500X12.000

RELEASED  
2010-11-30  
*MW*

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE RELATED SPECIFICATIONS, AND EG., CHANGED TITLE FROM "304/316 BAR" TO "304/316 BAR/PLATE"			MB	10.11.25
B	REFORMAT DWG, ADD SPECS (ZN D6-1), REF PAR 09-020A			CP	09.07.15
A	NEW ISSUE			PH	05.08.10
REV.	DESCRIPTION			BY	DATE
DESIGN	<i>pt</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA			
DRAWN	<i>15</i>	DRAWING NO. <b>M304B</b> REV. C SHEET 1 OF 1			
CHECKED	<i>JP</i>				
MFG. APPR.	<i>JP</i>				
APPROVED	<i>JP</i>				
DE APPR.	<i>JP</i>				
DATE	10.11.25			SCALE	NTS

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NOT TO BE USED OR ANY PORTION THEREOF NOT COMMUNICATED TO ANY OTHER PERSON WITHOUT  
WRITTEN PERMISSION FROM DART AEROSPACE LTD

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304B 0.500x6.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048646

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 6  
 QUANTITY INSPECTED: 6  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.500  
 THICKNESS RECEIVED: 0.500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>N</u>	<i>Astm A276</i>
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	<i>Heat # 600J</i>
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>1</u>	SIGNED OFF BY: _____
DATE: <u>9- MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

8 7 6 5 4 3 2 1

## SPECIFICATION CONTROL DRAWING

⚠ PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: AISI 303 NOT ACCEPTABLE)

⚠ SPECIFICATION: ASTM A276 OR ASTM A240

PART NUMBER: M304B | T.TTT | X | WW.WWW |  
| THICK | | WIDTH |

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WW.WWW" = WIDTH IN INCHES

⚠ EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
EG. 0.5" X 12.0" PLATE = M304B0.500X12.000

RELEASED  
11 2010-11-30  
W

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE RELATED SPECIFICATIONS, AND EG.; CHANGED TITLE FROM "304/316 BAR" TO "304/316 BAR/PLATE"	MB	10.11.25
B	REFORMAT DWG, ADD SPECS (ZN D8-1), REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	PH	05.08.10
REV.	DESCRIPTION		BY DATE
DESIGN	<i>Pat</i>		<b>DART AEROSPACE LTD</b>
DRAWN	<i>1</i>		HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>DP</i>		DRAWING NO.
MFG. APPR.	<i>✓</i>		M304B REV. C
APPROVED	<i>✓</i>		SHEET 1 OF 1
DE APPR.	<i>✓</i>		TITLE
DATE	10.11.25		SCALE
	304/316 BAR/PLATE		NTS

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8 7 6 5 4 3 2 1

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4140H-R1.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048645

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 10  
 QUANTITY INSPECTED: 10  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>N</u>	Astm A304
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	Heat# 177569
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DL</u> DATE: <u>9-00</u> <u>MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN <i>RF</i>	DRAWN BY <i>RF</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>RF</i>	APPROVED <i>RF</i>	DRAWING NO. M4140H-R	REV. A SHEET 1 OF 1
DATE 05.02.21		TITLE 4140 ROUND BAR	SCALE 1:1
A	05.02.21	NEW ISSUE	

PURCHASE MATERIAL: AISI 4140H ROUND BAR

PER AISI 4140 OR ASTM A304 02 / -A-434-BC /

-A193-03- GRADE-B7 / -A29-03 / -A322-91 OR

UNS # - G41400

MINIMUM ULTIMATE TENSILE STRENGTH = 100 ksi

MINIMUM YIELD TENSILE STRENGTH = 66 ksi

PART NUMBER: M4140H-R | D.DDD | WHERE D.DDD = DIAMETER IN INCHES  
DIA

EG. 7/8" ROUND BAR = M4140H-R0.875

RELEASED  
25/03/25 #1

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#4919

R4140-1H-V

P0.12367

49633

38.

## Eaton Steel Bar Company Inspection Certificate 1686880

EN 10204:2004-3:1

	BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
	222244	13-Dec-2017	B38384	11142 rev 005	506295	1 HR RD 4140/42MM 24ft6in SBQ QTST FG MST

All bundles listed below were produced using steel from Heat 177569 Issued by ALTON STEEL and were completed from Eaton Steel Job 826517.

Chemistry	Description	Value	Units	Mechanical	Description	Value	Units
C	Carbon	0.41000	PWGT	TENSILE PSI	Tensile Strength in PSI Units	148000	PSI
Mn	Manganese	0.89000	PWGT	YIELD PSI	Yield Strength in PSI Units	138000	PSI
P	Phosphorus	0.01300	PWGT	ELONGATION	Percent Elongation	17.00	PCT
S	Sulfur	0.02000	PWGT	REDUCTION	Percent Reduction in Area	52.0	PCT
Si	Silicon	0.23000	PWGT	BRINELL SURF	Brinell Surface	271.0	BRN
Ni	Nickel	0.08900	PWGT	Heat Treating	Description	Value	Units
Cr	Chromium	0.84700	PWGT	TEMPER TEMP F	Temper Temp in Fahrenheit	500 - 2500	DEGF
Mo	Molybdenum	0.15900	PWGT	AUSTEN TEMP F	Austenitize Temp in Fahrenheit	1600 - 1700	DEGF
Al	Aluminum	0.00300	PWGT	SR TEMP F	Stress Relief Temp in Fahrenheit	500 - 2500	DEGF
Cu	Copper	0.25000	PWGT	MAGNETISM-HT	Magnetism in Gauss	0 - 20	GN
V	Vanadium	0.02800	PWGT	TIME AT TEMP	Time at Temperature	Report	-
Cb	Columbium	0.00300	PWGT	QUENCH MEDIA	Quench Media Requirements	P&W/O	-
N	Nitrogen	0.01100	PWGT	STRESS FREE	Cert stress free	CERTIFIED	-
P+S	Element Sum Limit	0.03300	PWGT	HT4140-42QT	Quench & Temper	CONFORMS	-
DI	Ideal Diameter	4.94000	IN	MILL Processing	Description	Value	Units
Cleanliness	Description	Value	Units	MELT COUNTRY	Melted in Country	USA	-
MACRO ETCH	Report macro etch results.	-	-	ROLLED COUNTRY	Rolled in Country	USA	-
Geometry	Description	Value	Units	RED RATIO	Reduction Ratio	4.94	RED
DIAMETER	Diameter	0.9910 - 1.0090	IN	ASTM Standard	Description	Value	Units
Jominy	Description	Value	Units	A193/193M-01	Grade B7	CONFORMS	-
J1	1/16 inch from Quenched End	56	HRC	A304-05	Carbon & Alloy Steel Bars End Quench Req	CONFORMS	-
J2	2/16 inch from Quenched End	56	HRC	A322-13	Steel Bars, Alloy, Standard Grades	CONFORMS	-
J3	3/16 inch from Quenched End	56	HRC	A434-90a-BC	ASTM A434 BC Tensile and Yield properties	CONFORMS	-
J4	4/16 inch from Quenched End	56	HRC	Structure	Description	Value	Units
J5	5/16 inch from Quenched End	56	HRC	PERCENT TM	Percent Tempered Martensite	80 - 100	PCT
J6	6/16 inch from Quenched End	55	HRC	MICROSTRUCTURE	Reported Microstructure	TM	-
J7	7/16 inch from Quenched End	54	HRC	Tag Number	Qty	Units	Length
J8	8/16 inch from Quenched End	52	HRC	022-2158147	2925	LBS	24ft6in
J9	9/16 inch from Quenched End	51	HRC				
J10	10/16 inch from Quenched End	50	HRC				
J11	11/16 inch from Quenched End		HRC				
J12	12/16 inch from Quenched End	47	HRC				
J14	14/16 inch from Quenched End	45	HRC				
J16	16/16 inch from Quenched End	42	HRC				
J18	18/16 inch from Quenched End	42	HRC				
J20	20/16 inch from Quenched End	41	HRC				
J22	22/16 inch from Quenched End		HRC				
J24	24/16 inch from Quenched End	39	HRC				
J26	26/16 inch from Quenched End	36	HRC				
J32	32/16 inch from Quenched End	35	HRC				

Bundle tags with Eaton Steel Identifiers reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/21/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 13-Dec-2017

This document was prepared by means of electronic

data processing and is valid without signature

10221 Capital Avenue, Oak Park, MI 48237 USA

Tel: 248-398-3434

http://www.eatonsteel.com

Fax: 248-398-1434



## CERTIFIED MILL TEST REPORT

Altin Steel Test Lab  
#5 Circle Street  
Ashtabula, OH 44004-2401  
(330) 433-4490 ext 2406  
(330) 433-4491 (Fax)

BILL TO		SHIP TO																	
Eaton Steel Corporation 10221 Capital Avenue Columbus, OH 43228		Eaton Steel Corporation c/o Apollo Heat Treat 19400 Capital Street Columbus, OH 43227																	
Date ASTM Ord. No. Item Description Heat Number	08/25/2017 87517 Steel Bar, Hot Rolled, 1.0000, 25.00 177559	Customer PO Customer PT. SAE 4140 ASTM A 302-1	103357-145 10313 SAE 4140 ASTM A 302-1																
<b>CHEMICAL ANALYSIS TEST METHODS ASTM A-415 &amp; B-1039</b>																			
<b>JOHNSON HARDENESSABILITY USING ASTM A-355 CALCULATED FROM CHEMICAL SI</b>																			
Heat Number	C	Mn	P	S	Si	Cr	Ni	Mo	Sn	Al	MoB	V	B	Ti	N	Ca			
177559	0.41	0.013	0.020	0.23	0.25	0.069	0.047	0.159	0.011	0.003	0.019	0.028	0.0005	0.0001	0.010	0.0019			
<b>SPECIAL TEST RESULTS</b>																			
ASTM E-45 Method A		ASTM E-45 Method C		EAL 502		ASTM E-608		Cuppy		Vidicons									
Heat Number	TA	TB	TC	TD	HA	HB	HC	HD	S	O	S	R	C	AC	AB	BN			
177559	7	4.94			59	56	56	55	54	52	51	50	47	45	42	41	39	35	35
<b>ADDITIONAL COMMENTS</b>																			
<p>No secondary added, or salts containing material or additives is used or deliberately added in the production of this steel. No weld or weld repair was performed on this material. This Steel is 100% Domestic Arc Furnace Melted and Casted in the U.S.A. Hardened according to NAFRA induction.</p>																			
<p>Submitted and known to before PMA, &amp; Notify Public, in and for the County of Huron, State of Illinois Date _____ Day of _____</p>																			
<p>My commission expires _____ (Notify Public)</p>																			

No secondary added, or salts containing material or  
additives is used or deliberately added in the production of this  
steel. No weld or weld repair was performed on this material.  
This Steel is 100% Domestic Arc Furnace Melted and Casted in the  
U.S.A. Hardened according to NAFRA induction.

I hereby certify that the above tests are correct as contained  
in the records of ALTIN STEEL INCORPORATED

Quality Leader: Scott Hall

Scott Hall

422637

Page 1 of 1

-097A

According to German law, and those of the European Union, the company

Douglas MacArthur, MacArthur

Page 1 of 1

#### • Productive Stress Free

Microtumors	(RCs)	As Crosslinked Macromolecules	Styrene	(UHCs)
Microtumors	(RCs)	As Crosslinked Macromolecules	Styrene	(UHCs)

Other Test Data	Water Quenched	Tempered at 140°F for 0.7 minutes	Annealed at 1380°F for 0.7 minutes
100% Retained	100% Retained	100% Retained	100% Retained

QCT Hardness Test Data												
Heat Number	QCT Hardness Test Data		Min		Max		Log10n		Surface Lotion			
	C	Mn	P	S	Si	NI	Cr	Mo	Al	V	B	
177688	0.410	0.690	0.013	0.020	0.230	0.089	0.847	0.159	0.260	0.003	0.028	0.0030
												Other
												Core
									33.7			RC
									32.7			RC
									27.9			Surfaces
												MIDI Radius
												RCG
												RCG
												QCT Hardness Test Data

GERDAU		Huntington Facility - Test Report		25 Commercial Road, Huntington, NY 14930 (200) 356-9380		Fax (200) 356-9382	
Sales Order Sheet Number 117569		Customer Name EATON STEEL CORPORATION		Location 10221 CAPITAL AVE, DAK PARK, MI 48237		Comments 1,00000 1,00000 1,00000 1,00000	
Grade 41745						4140	
Total Remarks: 1 HR RD 41400SM 26FT FG MS1 W0 828517 44 11142							
Approved <input checked="" type="checkbox"/> By <input type="checkbox"/> Teleligning Approved Date 10/24/17 Comments Date 10/24/17							

NA's hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NA's.

Technical  
Dept. Mgr.

02600J HB	02600J HB	E T	87.39	38.36	65.40	80.50	67.81
Product Id#	Plate#	UTS Oz 14	KSI 20C .24 YS 20C ELONG. % 8-2"	KSI Hard R of A			

### MECHANICAL PROPERTIES

600J	US	.0158	18.0605	.3750	1.7165	.2690	.0763	8.0920	.0305	.0013
<b>HEAT</b>										
<b>CHEMICAL ANALYSIS</b>										
CM C % CR % CU % MN % MO % NI % P % S %										

REMARKS:	Mat.1 is Free of Mercury Contamination. No weld repairs.	EN 10204:2004 3.1; ROHS 1 & 2 Compliant	Material is Free of Radioactive Contamination	Steel Making Process: EAF, AOD, & Cont. Casting	Product Mfg. by a Quality Mgt. Sys. in Conf. w/ ISO 9001	CM (Country of Melt) (Spain) (United States) ZA (South Africa) JP (Japan)	Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323	HEAT CM (Country of Melt) (Spain) (United States) ZA (South Africa) JP (Japan)	Chemical Analysis per ASTM A751/14a
Product Id#	Plate#	Skid #	Thickness	Width	Weight	Mark	Places	Commodity Code	600J

Customer: 007185 001	Date: 11/20/2017	Page: 1	5
Your Order: 15496	NAS Order: IN 0255577 13		
Cross-section: ASTM A262/15 A 180Bend-O			
REMARKS:	Mat.1 is Free of Mercury Contamination. No weld repairs.	EN 10204:2004 3.1; ROHS 1 & 2 Compliant	Material is Free of Radioactive Contamination

Customer: 355925 8	Date: 11/20/2017	Page: 1	5
Customer: 007185 001	Date: 11/20/2017	Page: 1	5
Your Order: 15496	NAS Order: IN 0255577 13		
Cross-section: ASTM A262/15 A 180Bend-O			
REMARKS:	Mat.1 is Free of Mercury Contamination. No weld repairs.	EN 10204:2004 3.1; ROHS 1 & 2 Compliant	Material is Free of Radioactive Contamination

METALLURGICAL TEST REPORT 10/13/904  
6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

NAS  
740 Imperial Road North  
Guelph, ON N1K 1Z3  
Canada Inc.  
North American Stainles

#9086  
00, 75982  
DALE

CO. 75982  
DRAFT

9133

Aperam Inox América do Sul S.A.

PO.13907

aperam

Head Office: Av. Coronel, nº 1115, 23º Andar - Centro - Belo Horizonte - MG - 30130-915 - Brazil  
Plant: Poco 1º da Maia, nº 9 - Centro - Timóteo - MG - 35180-018 - Brazil  
Branches: Av. Mercado Benz, nº 1.420 - Distrito Industrial - Campinas - SP - 13054-750 - Brazil  
Rodovia RSC 453, Km 2,2 - SN - Distrito Industrial - Cachoeira do Sul - RS - 95110-080 - Brazil

## QUALITY CERTIFICATE

acc. to EN 10204-3.1.

Number:  
APERAM Order:  
Date:  
Invoice:

1980387  
79541101  
17/08/2017  
1191E17

PO# 15321

Steel grade: AISI 304L  
Dimensions: 18,88 mm x 1524 mm x 6096 mm - 0,625 in x 60,00 in x 2401  
Marks:

### Chemical composition

Heat nr.	C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	N PPM	Al %	Co %	Cu %			
702625E	0,018	1,28	0,460	0,0353	0,0009	18,05	8,01	0,075	440	0,0033	0,170	0,1228			
760990B	0,020	1,46	0,460	0,0395	0,0020	18,05	8,00	0,111	419	0,0037	0,165	0,1816			

### Results

Test/Variable	U.M:	702625E038		702625E035		760990B023		760990B022		760990B024		702625E032	
		Source:	702625E03	702625E03	760990B02	760990B02	760990B02	760990B02	760990B02	760990B02	702625E03		
			H	T		H	T	H	T	H	T	H	T
Tensile Strength	KSI		99,21			99,21		96,89		96,89		96,89	
Yield Strength 0,2%	KSI		51,05			51,05		46,99		46,99		46,99	
Yield Strength 1,0%	KSI		55,84			55,84		50,18		50,18		50,18	
Elongation 2"	%		53,00			53,00		55,00		55,00		55,00	
Austen. Grain Size			06/06			06/06		06/06		06/06		06/06	
Hardness RB	HRB	84,76	84,76	84,76	84,76	78,33	78,33	78,33	78,33	78,33	78,33	84,76	84,76
Oxalic Test:		DUAL	0	DUAL	0								
Net Weight	LB	2.6560		2.6560		2.6670		2.6670		2.6670		2.6560	
Gross Weight	LB	2.8770		2.8770		2.8880		2.8880		2.8880		2.8770	

Heat & Lot Identification (U.M.):

Ok

Surface quality / dimensions:

Ok

Heat treatment: Minimum Solution anneal temp. 1800 F

Standards:

ASTM A480/A480M 16B

ASME SA480/SA480M 15

ASME SA240/SA240M 15

DIN EN 10204-3.1 05

AD 2000 W 0 06

AD 2000 W 10 07

AD 2000 W 2 08

NACE MR0 ISO 15156 09

DIN EN 10028-7 16E

DIN EN 10088-2 14

DIN EN 10088-3 14

DIN EN 10088-4 10

ASTM A240/A240M 16A

Remarks:

DUAL CERTIFIED AISI- 304/304L NO WELD REPAIR PERFORMED Steel grade also acc. to  
o DIN WN 1.4307

a) Free from mercury contamination.

b) Material free of contamination from radioactivity. (Guarantee while stored under responsibility of Aperam Inox América do Sul S.A.).

c) The products supplied are in compliance with the requirements of the order and the product specification.

d) Quality management system certified acc to standard ISO 9001 - Certificate ABS QE N° 30071.

e) Quality management system certified acc to standard ISO/TS 16949 - Certificate ABS QE N° 38324.

f) Environmental management system certified acc to standard ISO 14001 - Certificate ABS QE N° 65989.

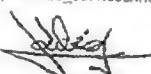
g) Product and system certified according to standard AD2000 / MERKBLATT and PED (Directive 97/23/EC) by TÜVNORD (Notified Body Nr. 0045).

h) The manufacturer operates a Quality Management System complying to annex I, section 4.3 of the Directive 97/23/EC..

i) Country of Mkt: Brazil. Country of manufacture: Brazil.

j) Products supplied are according to DIN EN 10028-7 and DIN EN 10088-4.

k) See Declaration of Performance (DoP) in [www.aperam.com.brasil/ing/produtos\\_servicos/inox\\_biblioteca.asp](http://www.aperam.com.brasil/ing/produtos_servicos/inox_biblioteca.asp)

  
Paulo Sérgio Ribeiro  
Qualified Inspector  
Aperam Inox América do Sul S.A.

QA2



#3402



North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

Certificate: 323707 5

Customer: 007025 001

## METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Date: 8/16/2017 Page: 1

Steel: 304/304L

Finish: 2B

Corrosion: ASTM A262/15 A, 180Bend-O

Your Order: C17720

NAS Order: DS 0012604 01

### PRODUCT DESCRIPTION:

STAINLESS STEEL SHEET, C.R. ANNEALED & PICKLED; UNS 30400/30403  
ASTM A240/16a, A480/16b, A666/15; ASME SA240/15, SA480/15, SA666/15  
CHEM ONLY ON FOLLOWING ASTM: A276/17, A479/17, A484/16, A312/16  
CHEM ONLY ON FOLLOWING ASME: SA312/13, SA479/13  
AMS 5511H/5513J XMRK; MIL-5059D AMD3(X CRN MEAS); MIL-4043B  
NACE MR0175/ISO 15156-3:2009 A, MR0103/07; QQS766D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

### REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; RoHS 1 & 2 Compliant  
Material is Free of Radioactive Contamination  
Steel Making Process: EAF, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DFARs Compliant

Product Id	Coil #	Skid #	Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
E26433	01459P F		.1200	48.0000	4,175 SHEETS	096.00	1	27	NA

P473811

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323 Chemical Analysis per ASTM A751/14a

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
459P	US	.0162	18.2830	.4160	1.7765	.3080	.0631	8.0820	.0310	.0010
SI %										
.3100										

### MECHANICAL PROPERTIES

Product Id#	Coil #	UTS ksi	20C ksi	.2% YS ksi	20C Elong %-2"	% Hard RB	Tail Hard
E26433	01459F	F T	93.97	47.25	48.77	85.00	85.50

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

8/16/2017



# 3419

fess-16948304/23

48611

Herkomst / Provenance / Herkunft		Type d'document / Form de document / Art der Dokumentierung	
outokumpu		CERTIFICADO DE INSPECCION	
		0000253804 /	
		1 / 1	
		Page / Seite / Seite	

EN 10204-3.1

Certificado de Proveeider / Form de document / Art der Dokumentierung

C17332

Kontrolliertes Werkstück / Form de Proveeider / Werkstückkontrolliert

901213420 / 002

Dokument mit Nr. der Entnahm / Form de document mit Nr.

85454520 / 010

Produkt / Product / Form de document

SHEET/BLAUBEER/BLAUBEER

Sond produkt und rohstoff / Form de document und Rohstoff

TYPE 304/304

Vermerk / Comment / Anmerkung: Condiciones de envío / Lieferbedingungen  
 ASTM A240/R240M-15a, ASME SA-240 Spec. II part A Ed-2015  
 ASTM A446/A446M-16a, ASME SA-446 Spec. II part A Ed-2015  
 ASTM A666-15

Produktbeschreibung (Produkt / Proveeider / Material)		Bestellungs-Prüfzeichen / Kennzeichnung		Prüfzeichen / Kennzeichnung	
1,52 mm t, 216,20 mm x 2,438,40 mm 0,060 inch t, 8,500 inch x 2,438,40 mm	Actual weight Peso efectivo Actual weight Peso efectivo	A00		HTC / 2B	

2,601 lb / 1,180 kg

790060

514212

100061411

100061412

2,601 lb / 1,180 kg

790060

514212

100061411

100061412

1,29

18.05

0.21

8.03

0.067

0.27

0.025

0.0010

57.7

58.1

43,510 / 300

97.316 / 671

42,784 / 295

97.026 / 569

ASTM A262 PRACTICE E - Sample Acceptable

OK

Tensile Strength / Tensile Strength / Tensile Strength

OK

Heat Treatment: Solution annealed 1920 °F Hr. As-cast weld cooled

OK

Bending test 0 K.

OK

No welding or weld repairs were performed on this material

OK

No intentional additions of Mercury compounds were made or used

OK

Free of radioactive contamination

OK

EU RoHS Directive 2011/65/EU Compliant

OK

Product manufactured in the USA.

OK

Country of Heat as per ISO 3166-1

Durchsetzung des Dokumentes / Documentation et acceptation / Aktionen zur Durchsetzung	
Outokumpu Stainless USA, LLC	
An ISO 9001: 2008 certified company	
EU PED 97/23/EC, Annex I, 4.3 certified	
Certificate of generated harmonization /	
CE Declaration of Conformity /	
CE Declaration of Conformity /	

P998707



THE HARDNESS CONVERSION WAS PERFORMED USING EQUATIONS GIVEN IN ASTM E140 DEVELOPED FROM DATA IN TABLES 1, 2, 3, 5, AND 6. THE PARTICULAR EQUATION USED WAS BASED ON MATERIAL TYPE AND MEASURED HARDNESSES SCALe. PER EQUATION 1, THIS CERTIFIED MATERIAL TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL. FEDERAL LAW PROHIBITS THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTITIES ON THE CERTIFICATE AND MAY BE UNISHARABLE AS A FELONY UNDER FEDERAL LAW. ATI FEP HOLDS SEVERAL QUALITY CERTIFICATIONS THAT INCLUDE SD-9001, AS9100, NADCAP, AND ISO/IEC 17025. MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH THE ATI FEP QUALITY MANUAL REVISION 26 DATED 06/14/2012.

PAGE 69 - FINAL PAGE

FOR ACCESS TO ONLINE CERTIFICATIONS OF TEST  
REGISTER AT [ATTIMETALS.COM](http://ATTIMETALS.COM)

TC = ATI-ELLAT ROLLED PRODUCTS; 100 RIVER ROAD; BRACKENRIDGE, PA 15065  
RN = ATI-ELLAT ROLLED PRODUCTS; 100 RIVER ROAD; BRACKENRIDGE, PA 15064  
TC = ATI-ELLAT ROLLED PRODUCTS; 1300 PACIFIC AVENUE; MARTONA HEIGHTS, PA 15065

EN 16204:2005 3.1 CERTIFICATE.

ALL FLAT ROLLED PRODUCTS HAS NO CONTROL OVER CUSTOMER PROCESSING OF MATERIAL, INCLUDING, BUT NOT LIMITED TO, BUFFING OR ELECTRO-POLISHING MATERIAL WITH A 2B OR OTHER FINISH, AND DOES NOT REPRESENT OR GUARANTEE THAT THE MATERIAL IS SUITABLE FOR ANY PARTICULAR PROCESS OR USE OF CUSTOMER.

ALL FLAT ROLLED PRODUCTS PERFORMS CHEMICAL ANALYSIS BY THE FOLLOWING TECHNIQUES FOR TESTING LOCATIONS TC, BN, & LO: C, S BY COMBUSTION/INFRARED N, O, H BY INERT FUSION/ THERMAL CONDUCTIVITY MN, P, SI, CR, NI, MO, CU, CB, CO, V BY MDXF B BY OES AL AND TI (>=0.10%) BY MDXF, OTHERWISE BY OES PB, BI, AG BY GFAA

ATL 304A STAINLESS STEEL SHEET C R COILS ANNEALED 2B FIN 3 EDGE  
CARRIER - LUKEHART TRUCKING, LLC

11/22/17	MG BILL	11/22/17A788650	VANDERGRIFT, PA	550144	13020102060000	20-117-426	LL	668536
11/22/17	MG BILL	11/22/17A788650	VANDERGRIFT, PA	550144	13020102060000	20-117-426	LL	668536
11/22/17	MG BILL	11/22/17A788650	VANDERGRIFT, PA	550144	13020102060000	20-117-426	LL	668536
11/22/17	MG BILL	11/22/17A788650	VANDERGRIFT, PA	550144	13020102060000	20-117-426	LL	668536
11/22/17	MG BILL	11/22/17A788650	VANDERGRIFT, PA	550144	13020102060000	20-117-426	LL	668536

CERTIFICATE OF TEST  
ATI  
PACKING LIST  
NOTICE OF SHIPMENT/

CO 7 5982 DART  
VIRAJ PROFILES LIMITED

Works: SURVEY NO.- 25/1, 25/2, 26 & 34, Village- MAAN, Taluka- PALGHAR, Dist- THANE, MAHARASHTRA -401 506, INDIA,  
e-mail- vielqc@viraj.com

PO 13908  
VIRAJ

TEST CERTIFICATE

ORDER NO	PACKING LIST NO	INSPECTION NO	DATE
P004802	64/1005939/15	100006688822	23.05.2016

GRADE  
304/304L

HEAT No.  
41257

BUNDLE NO :  
1100508253

DESCRIPTION

STAINLESS STEEL BRIGHT BARS

ROUGH & PEELED

SIZE	SHAPE	TOLERANCE	LENGTH	PIECES	WEIGHT
5 1/2"	ROUND	DIN 1013	12' - 14'	1	1,111.000 LB

CHEMICAL ANALYSIS

%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Cu	%Mo	%Co	%N2
0.0170	1.070	0.360	0.0250	0.0350	18.170	8.070	0.550	0.340	0.150	0.08200

TEST RESULTS

0.2% yield strength ksi	Tensile Strength ksi	Elongation %	Reduction Of Area %	Hardness BHN	Grain Size NOS
40.0	84.0	60.0	71.0	170.0	5.0

SPECIFICATION:

MATERIAL CONFIRMS TO DIN EN 10088-3:2005:WNR 1.4301/1.4307,EN 10222-5 AND EN 10272 COND-A & ASTM A182/A-182M-15, ASTM A276/A276M-16 COND A,A479/A479M-15 COND A, A193/A193M-12b B8 CL-1, A320/A320M-11a B8 CL-1, A484 11, A388/A388M-05,ASME SA182-14, SA179-11, SA 193-11 B8 CL-1, SA320-11 B8 CL-1,ASTM A314-2008. IGC SATISFACTORY AS PER ASTM A 262-10 PRACTICE E. AMS 5639H /AMSS5647J (EXCEPT MARKING), QQ-S-763F, NACE MR0103-2012,NACE-MR0175/ISO-15156-2015. SAE-AMS-S-7720A, MIL-S-862-B, AISI 304/304L & UNS#S30400/S30403. CERTIFICATION AS PER EN 10204-3.1.

REMARKS

MATERIAL IS FREE FROM MERCURY CONTAMINATION, FREE FROM WELD OR WELD REPAIRS, MICRO-FREE FROM CONTINUOUS CARBIDE NETWORK ON GRAIN BOUNDARIES. MACRO-GOOD, MINIMUM SOLUTION ANNEALING TEMPERATURE 1050C, SOAKING TIME 02 HRS, WATER QUENCHED. MELT SOURCE-AOD. WE CONFIRM THAT THE MATERIAL HAS BEEN TESTED AND FOUND TO BE FREE FROM RADIOACTIVE CONTAMINATION.COUNTRY OF ORIGIN: INDIA.

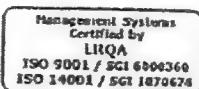
We hereby certify that the material described above has been tested and complies with the terms of order/contract.

WORKS INSPECTOR  
K R K MURTHY

RSS-S8-10

48674

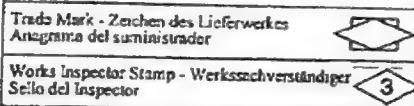
Larrazo LOIU (VIZCAYA) España  
P.O. Box 1.322/48080 Bilbao  
Tel. 34-(0) 4 71 13 00  
Fax 34-(0) 4 53 16 36



LES ACIERS TRANSBEC (1997) LTEE  
4054, BOULEVARD CORBUSIER, BUREAU 201  
LAVAL, QUEBEC, H7L 5R2 - CANADA

ACEROS INOXIDABLES

OLARRA



Certificate type - APZ Nach Certificado tipo		EN 10204/3.1	Certificate n° - Prüf-Nr Certificado n°		321264	Date - Datum - Fecha 19 - 07 - 2017					
Our order N° Werks - Nr Nº de Referencia		640247	Heat Schmelze Colada	439067	Your order N° Bestell - Nr Pedido N°		47725-VAR				
Steel Grade Workstoff Celdad					According to Entsprechend Corresponde			ASTM A 479 / A 479M-15.			
Shape and Size - Gegenstad Perfil y dimension ROUND 5/8"		Tolerance - Toleranz Tolerancia		ASTM A 484 /TB.7		Bund es Bunde Bultos	Bars Stäbe Barras	Weight Gewicht Peso			
ASME SA 479 / SA 479M-15 ASTM A 276/A 276M-16a. ASTM A 182/A 182M-16. ASME SA 182 / SA 182M-15 ASTM A 193/A 193M-16 B8 CLASS.1. ASME SA 193/SA 193M-15 B8 CLASS.1. ASTM A 320 / A 320M-14. AMS QQS 763D-15 COND.A.		Requirements - Anforderungen - Exigencias		Chemical composition according to ASTM F 899-12b. Chemical composition according to DOD-F-24669/6. Type 304-F.304-F.304L.							
Melting process / Eisschmelzungsart / Proceso de Fusión E.A.F. / A.O.D.			Heat treatment / Wärmbehandlung / Tratamiento térmico 1050C 4H/Std WATER/WASSER/AGUA								
Solution annealed/Abgeschreckt/Hipertempern-Cold drawn/Gezogen/Estrado-Polished/Pollert/Pulido-											
Test results - Ergebnis der Prüfungen - Resultados de los ensayos											
Dimension of Specimen Abmessungen des Probestabes Medida de las probetas		Rp0,2% KSI	Rp 1% KSI	Rm KSI	A %L5D	A %L4D	Z %	Hardness Härte HBw	Impact test / Kersbschlag / Resiliencia ISO V. fl. lb		
RD. 12,50 mm.		Min.	25		70		30	40			
		Max.									
Temperature °C 20	Spec N°. Probe Nr. Pro N°.	1	84	102	108		36	71	235		
	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	Co
Min.					18,00			8,00			
Max.	0,030	1,00	2,00	0,045	0,030	20,00		12,00		0,1000	
	0,020	0,29	1,45	0,039	0,025	18,00	0,35	8,10	0,50	0,0900	0,14
Visual and dimensional inspection Besichtigung und Ausmessung O.K. Control visual y dimensional			Radioactivity inspection Radioaktivitätskontrolle O.K. Control de Radioactividad			Antimixing lost Spätdross Vorwachungspr. O.K. Antimixezia			Grain size Korngrösse Tamaño de grano		
Remarks - Bemerkungen - Observaciones Free From Mercury contamination/Quecksilberfreiheit. No weld repair. IC test acc./IK prüfung nach ASTM A 262 E.15. OK										EDV / EDP Acc. EN 10.204 Marian Tejedo Quality Mng.	
										Works Inspector Der Werkssachverständige Inspector de fábrica	



7953 Washington Woods Dr.,  
Dayton, OH 45459  
Phone: (937)573-4675 Fax: (702)828-4128

# Material Test Report

Date	MTR No.
5/07/2016	0000056726
Ref No: 104702	

## TEST CERTIFICATE ACC TO DIN 50049 E 3.1 B/EN: 10204: 3.1

Part Number: 87-15955-10

PO Number: 87-15955

Description: A513T5-14; SRA; DOM; Grade=1020; Category=CARBON WELDED; Round; OD=0.625"; ID=0.435"; (WT=0.085"); Deburred; Length=240" to 288"

Product: TUBE

Ends: Deburred

Heat No: 15D2317

Steel Grade: 1020

DIMENSIONS	TOLERANCE					QUANTITY		
	MM	IN	-VE	+VE	UOM	NUMBER	METER / FT	WEIGHT TON
OD	15.875	0.625	0.0000	0.0050	IN	4	6,351.422	20,838.000
ID	11.049	0.435	0.0050	0.0000	IN			5.600
WT	2.413	0.085	0.0000	0.0000	IN	6,098.000 - 7,315.200	MM	240.000 - 288.000
								IN

CHEMICAL ANALYSIS					MECHANICAL PROPERTIES					
ELEMENTS	UOM	MIN	MAX	MILL	PRODUCT	Y.S	U.T.S	% E	HARDNESS	
Carbon (C)	%	0.1800	0.2300	0.2040		MIN	55,000	65,000	10.00	75.00
Manganese (Mn)	%	0.3000	0.8000	0.4190		MAX				
Silicon (Si)	%			0.110		MILL	71,480	81,800	20.00	83.00
Aluminum (Al)	%			0.350		PROD				
Phosphorus (P)	%			0.0350	0.0090					
Sulfur (S)	%			0.0360	0.0050					
Chromium (Cr)	%									
Nickel (Ni)	%									
Molybdenum (Mo)	%									
Vanadium (V)	%									
Copper (Cu)	%									
Columbium (CB)	%									
Calcium (Ca)	%									
Titanium (Ti)	%									
Nitrogen (N)	%									
Boron (B)	%									
Zirconium (Zr)	%									
Antimony (Sb)	%									
Tin (Sn)	%									

100% EDDY CURRENT TESTING- E309

PASSED

FLATTENING TEST

2/3% OF OD 1/3% OF OD PASSED

FLARING TEST

15% OF ID PASSED

STRAIGHTNESS

PASSED (1/1000 MM)

Remarks:

Melted In: INDIA

Produced In: INDIA

Product is free of weld repair and has not come in contact with Mercury or any of its components.

We hereby Certify that the material described above conforms to Specification and Purchase Order.

*Bill Johnston*

Bill Johnston

Quality Co-ordinator

Any questions, Please email: TestReports@aaris-llc.com



## TPI Work Test Certificate

**TUBE INVESTMENTS OF INDIA  
TUBE PRODUCTS OF INDIA - MODULE - 1  
POST BOX NO.4 & 18, M T H ROAD, AVADI, CHENNAI - 600054**



Description : BCS283 /06-JAN-16	TC No : PAE/8C1610749
Specification : /	Date : 31-JAN-16
Condition : PRECISION STEEL TUBES - CDW	Invoice No : 4421889573
Bundle No's : ASTM A513 / A513M-15 T5 1020	Invoice Date : 29-JAN-16
Cast Part No : SRA	Job /Batch No : RBCL1601415
Bundle Tagging : 016000794,016000793	
Tube Marking : CUSTOMER SIZE /CONDITION /QUANTITY /GROSS WEIGHT /TAG MARKING / WO.NO. / SPEC & GRADE /DESTINATION / BUNDLE NO /COUNTRY OF ORIGIN.	
P. Uom : P.O.NO. /TPI-ID /SIZE /SPEC /CONDITION /TAG MARKING/ HEAT NO. /MADE IN INDIA.	
Size : Inches	
	: .750" OD x .560" ID x 0.095" WT x 20'-24' RL

Quantity in : 4230.591 Ft

### LADLE ANALYSIS :

Process	Heat No.	%C	%Mn	%P	%S	%Si	%Al
Min		.18	.3				
Max		.23	.6	.035	.035		
Obs	15102800	.185	.52	.005	.005	.011	.044

Full Section Longitudinal Tensile Test at Room Temp			
Test	Heat No	Y.S	T.S
Min		379	448
Max			10
Obs	15102800	MPA	MPA
		475.15	587.1
		%	23

Rock Well Hardness
75 HRB
82 HRB

Dimensions in : Inches				
Spec	OD	ID	WT	Length
Min	.75	.555		240
Max	.755	.56		288
Obs-Min	.752	.556	0	240
Obs-Max	.754	.559	0	287.992

### Technological Tests :

Test	Spec	Result
Crushing		-
Flaring		-
Flattening		-
Flanging		-
Rev. Flang.		-
Elng.Gang.Len		-

### Non-Destructive Tests :

Test	Spec	Result
Roughness OD		
Roughness ID		
Straightness	0.76/1000 MM MAX	0.30/1000 MM
Eddy Current	100	100% TESTED OK
Visual		DEFECT FREE
Ultrasonic Test		-

This is to certify that the goods are supplied as per the purchase order and specification Requirements

Prepared by : M. Yuvaranjani

Quality Shift Incharge Signature:

for Tube Investments of India  
Unit: Tube Products of India Module - 1

*[Signature]*

Mathavan.M  
Mgr-Quality-IBP-TP

AC-7785

TME 1000160-V

# 605

TRA-1619  
4964b.

TPI Work Test Certificate



TUBE INVESTMENTS OF INDIA  
TUBE PRODUCTS OF INDIA - MODULE - 1  
POST BOX NO.4 & 18, M T H ROAD, AVADI, CHENNAI - 600054



Order No. : BC6903 /22-DEC-16 TC No : PAE/SC1720318  
 Date : 10-FEB-17

Description : PRECISION STEEL TUBES - CDW  
 Specification : ASTM A513/A513M-15 T5 C1020  
 Condition : SRA  
 Bundle No's : 017000842  
 Invoice No : 4421810999  
 Invoice Date : 31-JAN-17  
 Job /Batch No : RBCL1701331

Customer Part No :  
 Bundle Tagging : CUSTOMER SIZE /CONDITION /QUANTITY /GROSS WEIGHT /TAG MARKING / WO.NO. / SPEC &  
 GRADE /DESTINATION / BUNDLE NO /COUNTRY OF ORIGIN.  
 Tube Marking : P.O.NO. /TPI-ID /SIZE /SPEC /CONDITION /TAG MARKING/ HEAT NO. /MADE IN INDIA.  
 P. Uom : Inches  
 Size : 1.000" OD X 0.760" ID X 0.120" WT X 20'- 24' R/L

Quantity In : 1857.513 Ft

LADLE ANALYSIS :

Process	Heat No.	%C	%Mn	%P	%S	%Si	%Al
Min		.18	.3				
Max		.23	.6	.035	.035		
Obs	D37954	.19	.49	.008	.005	.023	.054

Full Section Longitudinal Tensile Test at Room Temp				
Test	Heat No	Y.S	T.S	Elong.
Min		379	448	10
Max				
Obs	D37954	480.9	563.76	22

Rockwell Hardness	Roughness	
	OD	ID
75		
HRB		
84		-

Dimensions In : Inches				
Spec	OD	ID	WT	Len
Min	1	.755		240
Max	1.005	.76		288
Obs-Min	1.001	.757	0	267.283
Obs-Max	1.003	.759	0	284.016

Technological Tests :

Test	Spec	Result
Crushing		-
Flaring		-
Flattening		-
Flanging		-
Rev. Flang.		-
Elong.Gang.Len		-

Non-Destructive Tests :

Test	Spec	Result
Straightness	0.76/1000 MM MAX	0.30 / 1000
Eddy Current	100	100% TESTED OK
Vision		DEFECT FREE
Ultrasonic Test		-

This is to certify that the goods are supplied as per the purchase order and specification Requirements

Prepared by : N. A. Jummal

Quality Shift Incharge Signature:

for Tube Investments of India  
Unit: Tube Products of India Module - 1

P. Es   
Mathavan.M  
Mgr-Quality-IBP-TP





# 2453

CAN ART  
ALUMINUM EXTRUSION L.P.

FAL - 11412-12

10.9353

48744

Material Test ReportManifest: 709584Ticket:  
1698543

Our Order: 879031-1      Cust P.O.: 791663

Die: ES04038      Part: 16001442

Alloy Temper: 6061 T6511

Description: 1.250 x 2.000 RECT. BAR

Print Date: 6/22/17

## Chemical Composition

Cast Num	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other Each	Other Total	Maximum
											Other
3B5790	0.60	0.17	0.22	0.04	0.81	0.06	0.01	0.02	0.05	0.15	

## Mechanical Properties

Sample ID	Cast #	Lot #	Test Date	Strength ksi		Elongation 2" gage length
				Ultimate	Yield 2% offset	
71383	3B5790	A11	6/14/17	44.71	41.46	15.5

Applicable Specifications: ASTM B221-14 AMS-QQ-A200/8A

Country of Origin: ONTARIO, CANADA

Can Art Aluminum Extrusion Inc. certifies that materials shipped under this order have been inspected and tested in accordance with Aluminum Association and agreed upon customer specifications. Can Art assumes no liability for additional costs which may be incurred during the customer's manufacture and sale of its products, and is subject only to the replacement of any materials not within agreed upon specifications provided written notification is received by Can Art within 30 days from the date of shipment.

Eric Hote - Tensile Testing

Authorized:

Evan Eng, Quality Assurance Manager



## Test de dureté Rockwell

### Rockwell Hardness Test

Client / Customer :

LES ACIERS TRANSBEC (1997) LTÉE.

Adresse / Address :

4054 BOUL. LE CORBUSIER, #201  
LAVAL, QC  
H7L5R2

# commande Sapa / Sapa order # : 7100203

# bon de commande / Purchase order # : OU-48345

# de matrice / Die # : MS 15954

Description: 4x3/4" FLAT BAR

# Alliage &amp; trempage / Alloy &amp; temper : 6061 T6

Longueur / Length : 6096 mm

# Contrôle / Control # : 553-1

# Coulée / Cast # : 70740

Dureté Rockwell E /  
Rockwell E hardness : 94 HREMin. requis /  
Min. required : 88 HREMax. permis /  
Max. permitted : 100 HRE

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0.20 - 0.60	0.35 Max	0.10 Max	0.10 Max	0.45 - 0.90	0.10 Max	0.10 Max	0.10 Max
6005	0.60 - 0.90	0.35 Max	0.10 Max	0.10 Max	0.40 - 0.60	0.10 Max	0.10 Max	0.10 Max
6005A	0.66- 0.74	0.14 - 0.28	0.08 - 0.16	0.18 - 0.26	0.46 - 0.54	0.03 Max	0.05 Max	0.05 Max
6061	0.40 - 0.80	0.70 Max	0.15 - 0.40	0.15 Max	0.80 - 1.20	0.04 - 0.35	0.25 Max	0.15 Max
6351	0.7 - 1.3	0.5 Max	0.10 Max	0.40 - 0.80	0.40 - 0.80	—	0.20 Max	0.20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-14 excepté pour la section 8.2 (nombre de spécimen).

We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-14 except for section 8.2 (number of specimen).

Sincèrement vôtre,  
Yours truly.

date : 2017-11-09

Daniel Alfredo Pelleter  
Directeur Qualité  
Quality Director





Abnahmeprüfzeugnis 3.1 (EN 10204)  
Inspection certificate - mill certificate

Nr.: 89051448  
Rev.: 0

Seite / page:  
1 von / of 2

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, EN/AS 9100, ISO 14001, NADCAP

Warenempfänger / consignee: CBS Atlanta 1500 Cherokee Pkwy ACWORTH GA 30102-1603 USA	Bestell Nr. / order no.: 5400341710-R01 Datum / date: 2017 02 23
Auftragsbest. Nr. / order confirm no.: 127031 Datum / date: 2017 02 24	Auftragsbest. Nr. / order confirm no.: 127031 Datum / date: 2017 02 24
Lieferschein Nr. / delivery note: 89051448 Datum / date: 2017 06 30	Lieferschein Nr. / delivery note: 89051448 Datum / date: 2017 06 30

Produkt / product

Form / form: Sheet

Werkstoff / material: 6061

Zustand / temper: T6

Dim. / dim.: [inchi]: 0,050x48,00x144,00

Kundenartikel Nr. / cust. article no.: ALFLR01645

Bedingungen / terms

Technische Lieferbedingungen / techn. spec.:  
AMS-QQ-A-250/11 08.1997

ASTM B 209 - 14

AMS 4027N, 07.2008

ASME SB-209, 2011a

Sondervorschrift / special terms:

AB-Pos. ord.-item.	BNr/Los Lot/No.	Teillös Part	Guss Nr. cast no.	Werkstoff material	Kollo Packno.	Gewicht netto weight net	Stk. pcs.
03	32115/01	00	01/00823487	6061	1270310006	4001,323 lbs	119
03	33395/01	00	01/00830557	6061	1270310007	3977,072 lbs	119

Chemische Zusammensetzung ([%] Gewichtsanteile) / Chemical composition ([%] weight proportion (OES))

Guss Nr. / cast no.	material	Si	Fe	Cu	Mn	Mo	Cr	Zn	Ti	Others Each	Others Total
01/00823487	spec. min.	0,40	-	0,15	-	0,80	0,04	-	-	-	-
		0,80	0,70	0,40	0,15	1,20	0,35	0,25	0,15	0,05	0,15
		0,66	0,40	0,25	0,13	0,98	0,17	0,05	0,03	0,02	0,03
01/00830557	spec. min.	0,40	-	0,15	-	0,80	0,04	-	-	-	-
		0,80	0,70	0,40	0,15	1,20	0,35	0,25	0,15	0,05	0,15
		0,65	0,39	0,23	0,11	0,87	0,17	0,08	0,03	0,01	0,03

Zugprüfung LT / tensile test LT

BNr/Los Lot/No.	Zustand temper	Richtung direction	Tests	UTS	YS	A2"	
				spec. min. 42,0	35,0	10	
				spec. max. -	-	-	
32115/01	T6	LT	2	from 45,8	35,5	17	
32115/01	T6	LT	to	46,0	35,8	17	

PA6 166V

**Abnahmeprüfzeugnis 3.1 (EN 10204)  
Inspection certificate - mill certificate**Nr.: 89051448  
Rev.: 0

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, EN/AS 9100, ISO 14001, NADCAP

2 von / of 2  
Seite / page:  
Datum / date:

2017 05 29

**Zugprüfung LT / tensile test LT**

BNr/Los Lot/No.	Zustand temper	Richtung direction	Tests	UTS [ksi]	YS [ksi]	A2" [%]
			spec. min.	42,0	35,0	10
			spec. max.	-	-	-
33395/01	T6	LT	2	from	47,9	39,3
33395/01	T6	LT	to	48,0	40,0	16

**Sonstige Prüfungen / other tests**

Biegeversuch: OK. / Transverse bend test: OK.

Maßkontrolle: OK. / Dimensional Check: OK.

Oberfläche: OK. / Surface inspection: OK.

**Bemerkungen / notes**

Gegossen und gefertigt in Österreich / Country of melt and manufactured in Austria

Es wird bestätigt, dass die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellung entspricht.  
We hereby certify that the material described above has been tested and complies with the terms of the order contract.

**Werksachverständiger / factory specialist**

Josef Klampfer

**E-Mail / e-mail**

josef.klampfer@amag.at

Herstellerland: Österreich / goods origin: The goods are of Austrian origin.

Maschinell erstellt - Gültig ohne Unterschrift / Automated - valid without being signed.



# 5337 RCR-38-V

TNA-2147



ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALLES/VIZCAYA (SPAIN)  
Tfno.: 946480211  
Fax: 946480128  
Email: calpradera@calibradospradera.es  
www.calibradospradera.es

49801

3P.

## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 49709

ALBARAN 49709 Delivery Note Nr.	CLIENTE LES ACIERS TRANSBEC (1997) LTÉE CUSTOMER
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Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norma :

Bright steel products. Technical delivery conditions.

PRODUCTO SOLICITADO / PRODUCT ACCORDING ASTMA108

MEDIDA Measurement	DESCRIPCION DESCRIPTION	OP Cast Nr.	TONERIA TON/TONNE	OP Cast Nr.	MEDIDA Measurement
63,50 0,00	12L14 RED. ESTIRADO 63,50 (2 1/2")	917091	1.094	-0,076	63,50
6,35 0,00	1018 RED. ESTIRADO 6,35 (1/4")	917092	978	-0,031	6,35
25,40 0,00	1018 CUA. ESTIRADO 25,40 (1")	916780	1.036	-0,130	25,40
9,53 0,00	1018 CUA. ESTIRADO 9,53 (3/8")	915990	788	-0,090	9,53
12,70 0,00	1018 CUA. ESTIRADO 12,70 (1/2")	916617	982	-0,110	12,70
9,53 0,00	1018 RED. ESTIRADO 9,53 (3/8") <i>RCR 38</i>	141111	2.072	-0,051	9,53
9,53 0,00	1018 RED. ESTIRADO 9,53 (3/8")	141131	2.130	-0,051	9,53
15,88 0,00	1018 RED. ESTIRADO 15,88 (5/8")	916940	1.020	-0,051	15,88
19,05 0,00	1018 RED. ESTIRADO 19,05 (3/4")	916887	996	-0,051	19,05
9,53 0,00	1018 CUA. ESTIRADO 9,53 (3/8")	915990	746	-0,090	9,53
9,53 0,00	1018 CUA. ESTIRADO 9,53 (3/8")	916803	650	-0,090	9,53
12,70 0,00	1018 CUA. ESTIRADO 12,70 (1/2")	916617	992	-0,110	12,70
19,05 0,00	1018 CUA. ESTIRADO 19,05 (3/4")	915992	1.002	-0,130	19,05
22,23 0,00	1018 CUA. ESTIRADO 22,23 (7/8")	915746	890	-0,130	22,23
25,40 0,00	1018 CUA. ESTIRADO 25,40 (1")	916780	1.034	-0,130	25,40
44,45 0,00	1018 CUA. ESTIRADO 44,45 (1 3/4")	916031	992	-0,160	44,45
50,80 0,00	1018 CUA. ESTIRADO 50,80 (2")	916736	1.194	-0,190	50,80
25,40 0,00	1018 CUA. ESTIRADO 25,40 (1")	916780	980	-0,130	25,40
50,80 0,00	1018 CUA. ESTIRADO 50,80 (2")	916736	1.194	-0,190	50,80
38,10 0,00	12L14 RED. ESTIRADO 38,10 (1 1/2")	916602	1.020	-0,051	38,10
12,70 0,00	1018 CUA. ESTIRADO 12,70 (1/2")	916617	990	-0,110	12,70

Composición química de la colada / Chemical Analysis of Heat

MEDIDA Measurement	OP Cast Nr.	COLADA Cast Nr.	% C	% Cr	% Cu	% Mn	% Mo	% N	% Ni	% P	% Nb	% S	% Si
63,50 0,00	917091	42050 AQ	0,080	0,055	0,011	1,110	0,007	0,000	0,022	0,063	0,310	0,310	0,004
6,35 0,00	917092	41480 GM	0,160	0,000	0,000	0,750	0,000	0,000	0,000	0,021	0,000	0,032	0,160
25,40 0,00	916780	41544 C	0,160	0,000	0,000	0,720	0,000	0,000	0,000	0,016	0,000	0,023	0,160
9,53 0,00	915990	40828 G	0,150	0,000	0,198	0,760	0,000	0,000	0,000	0,016	0,000	0,033	0,242
12,70 0,00	916617	41450	0,150	0,000	0,000	0,769	0,000	0,000	0,000	0,015	0,000	0,009	0,194
9,53 0,00	141111	41776 GM	0,160	0,000	0,290	0,750	0,000	0,008	0,000	0,021	0,000	0,032	0,160
9,53 0,00	141131	41776 GM	0,160	0,000	0,290	0,750	0,000	0,008	0,000	0,021	0,000	0,032	0,160
15,88 0,00	916940	41731 AA	0,153	0,000	0,015	0,863	0,000	0,004	0,000	0,014	0,000	0,033	0,218
19,05 0,00	916887	41645 G	0,160	0,000	0,000	0,640	0,000	0,000	0,000	0,013	0,000	0,019	0,133
9,53 0,00	915990	40828 G	0,150	0,000	0,198	0,760	0,000	0,000	0,000	0,016	0,000	0,033	0,242
9,53 0,00	916803	40828 G	0,150	0,000	0,198	0,760	0,000	0,000	0,000	0,016	0,000	0,033	0,242
12,70 0,00	916617	41450	0,150	0,000	0,000	0,769	0,000	0,000	0,000	0,015	0,000	0,009	0,194
19,05 0,00	915992	40080 S	0,165	0,000	0,000	0,780	0,000	0,000	0,000	0,009	0,000	0,024	0,274
22,23 0,00	915746	40587 C	0,150	0,000	0,000	0,600	0,000	0,000	0,000	0,017	0,000	0,020	0,160
25,40 0,00	916780	41544 C	0,160	0,000	0,000	0,720	0,000	0,000	0,000	0,016	0,000	0,023	0,160
44,45 0,00	916031	40716	0,200	0,000	0,000	0,800	0,000	0,000	0,000	0,020	0,000	0,018	0,190
50,80 0,00	916736	41336 C	0,150	0,000	0,000	0,710	0,000	0,000	0,000	0,012	0,000	0,012	0,160



ARANA Y LUPARDO, 2  
48490 UGAL-MIRAVALLES/VIZCAYA (SPAIN)  
Tfno.: 946180211  
Fax: 946480128  
Email: calpradera@calibradospradera.es  
www.calibradospradera.es

## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a / Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 49709

ALBARAN 49709 Delivery Note Nr.	CLIENTE LBS ACIERS TRANSBEC (1997) LTÉP CUSTOMER
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Norma : EN 10177 Productos Calibrados de acero. Condiciones técnicas de suministro.

Norma : Bright steel products. Technical delivery conditions.

	% C	% Cr	% Cu	% Mn	% Mo	% N	% Ni	% P	% Pb	% S	% Si
25,40	0,00	916780	41544 C	0,160	0,000	0,000	0,720	0,000	0,000	0,016	0,000
50,80	0,00	916736	41336 C	0,150	0,000	0,000	0,710	0,000	0,000	0,012	0,000
38,10	0,00	916602	41374 IS	0,070	0,000	0,000	1,120	0,000	0,000	0,043	0,240
12,70	0,00	916617	41450	0,150	0,000	0,000	0,769	0,000	0,000	0,015	0,000

Características mecánicas / Mechanical properties

MEDIDA Measurement	OF Cast Nr.	COLADA Cast Nr.	Resistencia Tens. strength N/mm <sup>2</sup>	Lím. elástico Yield point 0,2% N/mm <sup>2</sup>	Ajargamiento Elongation L <sub>0</sub> =50 mm.	Dureza HB Hardness HB	Estrichelo %
63,50	917091	42050 AG	504,00	456,70	15,66	185,00	0,00
6,35	917092	41480 GM	592,90	534,90	7,76	190,00	64,75
25,40	916780	41544 C	612,35	583,92	28,20	169,00	0,00
9,53	915990	40828 G	783,23	761,48	10,92	247,00	0,00
12,70	916617	41450	606,20	550,30	15,40	185,00	61,50
9,53	141111	41776 GM	592,90	531,30	18,50	172,00	66,45
9,53	141131	41776 GM	592,90	531,30	18,50	172,00	66,45
15,38	916940	41231 AA	627,37	594,90	19,38	180,00	58,58
19,05	916887	41645 G	647,30	621,09	15,64	195,00	56,94
9,53	915990	40828 G	783,23	761,48	10,92	247,00	0,00
	916803	40828 G	828,30	792,35	9,76	258,00	47,88
12,70	916617	41450	606,20	550,30	15,40	185,00	61,50
19,05	915992	40080 S	530,32	510,28	34,30	162,00	62,99
22,73	915746	40587 C	628,00	595,00	23,00	180,00	0,00
25,40	916780	41544 C	612,35	583,92	28,20	169,00	0,00
44,45	916031	40716	513,00	324,00	32,10	0,00	0,00
50,80	916736	41336 C	515,00	330,00	34,00	0,00	0,00
25,40	916780	41544 C	612,35	583,92	28,20	169,00	0,00
50,80	916736	41336 C	515,00	330,00	34,00	0,00	0,00
38,10	916602	41374 IS	0,00	0,00	0,00	151,00	0,00
12,70	916617	41450	606,20	550,30	15,40	185,00	61,50

Calidad Superficial

DESCRIPCIÓN Description	OF	Clase EN 10177-1
12U14 RED. ESTIRADO 63,50 (2 1/2")	917091	2
1018 RED. ESTIRADO 6,35 (1/4")	917092	2
1018 RED. ESTIRADO 9,53 (3/8")	141111	2
1018 RED. ESTIRADO 9,53 (3/8")	141131	2
1018 RED. ESTIRADO 15,88 (5/8")	916940	2
1018 RED. ESTIRADO 19,05 (3/4")	916887	2
12L14 RED. ESTIRADO 38,10 (1 1/2")	916602	2



ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALLES/VIZCAYA (SPAIN)  
Tfn.: 946480211  
Fax: 946480128  
Email: calpradera@calibradospradera.es  
www.calibradospradera.es

## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 49709

ALBARAN 49709 <i>Delivery Note Nr.</i>	CLIENTE LES ACIERS TRANSBEC (1997) LTÉE <i>CUSTOMER</i>
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Norma : EN 10277 Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm : Bright steel products. Technical delivery conditions.

Observaciones: BARRAS DE ACERO ESTIRADAS EN FRIO SIN ALEAR

**DEPARTAMENTO DE CALIDAD:** Certifica que el mencionado producto cumple con las especificaciones del pedido.  
**QUALITY DEPARTMENT:** Certify that the product fulfills the order specifications.

Fecha/Date: 20/11/2017

Firmado: Susana Fernández  
Directora de Calidad



Sistema de  
Gestión  
ISO 9001:2008  
Número de  
Registro: 10-1550040264



ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALLES/VIZCAYA (SPAIN)  
Tfn.: 946480211  
Fax: 946480128  
Email: calpradera@calibradospradera.es  
www.calibradospradera.es

47861  
JP

## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10277/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 46579

ALBARAN 46579 Delivery Note Nr.	CLIENTE LES ACIERS TRANSBEC (1997) LTÉE CUSTOMER
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Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm :

Bright steel products. Technical delivery conditions.

PRODUCTO SOLICITADO / PRODUCT ACCORDING ASTM A108

Nº PEDIDO Purchase Order	DETALLE / DESCRIPTION	UNIDAD / UNIT	VALOR / VALUE								
SM-46716	1018 CUA. ESTIRADO 15,88 (5/8")			974	-0,110	915991	15,88				
SM-46716	1018 CUA. ESTIRADO 19,05 (3/4")			512	-0,130	915840	19,05				
PAJ-46981	1018 CUA. ESTIRADO 9,53 (3/8")			992	-0,090	915990	9,53				
PAJ-46981	1018 RED. ESTIRADO 9,53 (3/8")			1.028	-0,051	915557	9,53				
MJP-46937	12L14 HEX. ESTIRADO 31,75 (1 1/4")			946	-0,076	915907	31,75				
PAR-47159	12L14 RED. ESTIRADO 22,23 (7/8")			892	-0,051	202246	22,23				
PAR-47159	12L14 RED. ESTIRADO 31,75 (1 1/4")			1.002	-0,051	202281	31,75				
MN-47068	12L14 RED. ESTIRADO 41,28 (1 5/8")			1.056	-0,076	137984	41,28				
MN-47068	12L14 RED. ESTIRADO 44,45 (1 3/4")			1.040	-0,076	135807	44,45				
MN-47068	12L14 RED. ESTIRADO 69,85 (2 3/4")			1.006	-0,102	915816	69,85				
MJP-47224	1018 RED. ESTIRADO 25,40 (1")			3.006	-0,051	138229	25,40				
PAJ-47267	1018 RED. ESTIRADO 22,23 (7/8")			1.168	-0,051	916091	22,23				
PAR-47472	1018 RED. ESTIRADO 25,40 (1")			2.998	-0,051	138494	25,40				
PAJ-47284	1018 RED. ESTIRADO 25,40 (1")			2.000	-0,051	138523	25,40				
MJP-47245	1018 RED. ESTIRADO 25,40 (1")			3.000	-0,051	138527	25,40				
OU-47424	1018 RED. ESTIRADO 25,40 (1")			1.000	-0,051	138623	25,40				

Composición química de la colada / Chemical Analysis of Heat

MEDIDA Measurement	OF	COLADA Cast Nr.	% C	% Cr	% Cu	% Mn	% Mo	% Ni	% P	% Pb	% S	% Si
15,88	0,00	915991	40639 S	0,165	0,000	0,000	0,763	0,000	0,000	0,015	0,000	0,021
19,05	0,00	915840	40080 S	0,165	0,000	0,000	0,780	0,000	0,000	0,009	0,000	0,024
9,53	0,00	915990	40828 G	0,150	0,000	0,198	0,760	0,000	0,000	0,016	0,000	0,033
9,53	0,00	915557	39825 GM	0,170	0,000	0,000	0,700	0,000	0,000	0,026	0,000	0,020
31,75	0,00	915907	39680 W	0,070	0,090	0,230	1,110	0,030	0,110	0,051	0,210	0,329
22,23	0,00	202246	40879 G	0,066	0,045	0,120	1,140	0,022	0,084	0,051	0,260	0,299
31,75	0,00	202281	40941 G	0,070	0,036	0,096	1,145	0,011	0,060	0,055	0,284	0,299
41,28	0,00	137984	40229 IS	0,080	0,000	0,000	1,110	0,000	0,000	0,047	0,220	0,295
44,45	0,00	135807	40237 IS	0,080	0,000	0,000	1,110	0,000	0,000	0,047	0,220	0,295
69,85	0,00	915816	40561 IS	0,076	0,000	0,000	1,130	0,000	0,000	0,054	0,230	0,285
25,40	0,00	138229	41198 G	0,160	0,000	0,000	0,630	0,000	0,000	0,007	0,000	0,010
22,23	0,00	916091	40717 G	0,160	0,000	0,000	0,640	0,000	0,000	0,014	0,000	0,008
25,40	0,00	138494	41198 G	0,160	0,000	0,000	0,630	0,000	0,000	0,007	0,000	0,010
25,40	0,00	138523	41198 G	0,160	0,000	0,000	0,630	0,000	0,000	0,007	0,000	0,010
25,40	0,00	138527	41198 G	0,160	0,000	0,000	0,630	0,000	0,000	0,007	0,000	0,010
25,40	0,00	138623	41198 G	0,160	0,000	0,000	0,630	0,000	0,000	0,007	0,000	0,010

Características mecánicas / Mechanical properties



ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALLES/VIZCAYA (SPAIN)  
Tfn.: 946480211  
Fax: 946480128  
Email: calpradera@calibradospradera.es  
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## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a / Made according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 46579

ALBARAN 46579 Delivery Note Nr.	CLIENTE LES ACIERS TRANSBEC (1997) LTÉE CUSTOMER
------------------------------------	---

Norma : EN 10277

Productos Calibrados de acero. Condiciones técnicas de suministro.

Norma :

Bright steel products. Technical delivery conditions.

MEDIDA Measurement	OF	COLADA Cast Nr.	Resistencia Tens. strength N/mm <sup>2</sup>	Lím. elástico Yield point 0,2% N/mm <sup>2</sup>	Alargamiento Elongación L <sub>0</sub> =50 mm.	Dureza HB Hardness HB	Estricción %
15,88	915991	40639 S	585,04	539,10	15,16	180,00	56,61
19,05	915840	40080 S	530,32	510,28	34,50	162,00	62,99
9,53	915990	40828 G	783,23	761,48	10,92	247,00	0,00
9,53	915557	39825 GM	713,60	684,30	11,10	205,00	60,63
31,75	915907	39680 W	533,38	523,05	12,04	169,00	45,79
22,23	202246	40879 G	556,53	537,21	20,08	172,00	47,29
31,75	202281	40941 G	554,30	542,90	19,26	172,00	41,62
41,28	137984	40229 IS	558,50	543,30	11,12	190,00	0,00
44,45	135807	40237 IS	538,50	503,50	15,30	195,00	0,00
69,85	915816	40561 IS	488,20	469,60	22,10	180,00	0,00
25,40	138229	41198 G	566,93	548,05	26,50	172,00	54,84
22,23	916091	40717 G	625,03	599,51	24,20	185,00	55,97
25,40	138494	41198 G	566,93	548,05	26,50	172,00	54,84
25,40	138523	41198 G	566,93	548,05	26,50	172,00	54,84
25,40	138527	41198 G	566,93	548,05	26,50	172,00	54,84
25,40	138623	41198 G	566,93	548,05	26,50	172,00	54,84

### Calidad Superficial

DESCRIPCIÓN Description	OF	Clase EN 10277-1
1018 RED. ESTIRADO 9,53 (3/8")	915557	2
12L14 HEX. ESTIRADO 31,75 (1 1/4")	915907	1
12L14 RED. ESTIRADO 22,23 (7/8")	202246	3
12L14 RED. ESTIRADO 31,75 (1 1/4")	202281	3
12L14 RED. ESTIRADO 41,28 (1 5/8")	137984	2
12L14 RED. ESTIRADO 44,45 (1 3/4")	135807	2
12L14 RED. ESTIRADO 69,85 (2 3/4")	915816	1
1018 RED. ESTIRADO 22,23 (7/8")	916091	2

Observación: BARRAS DE ACERO ESTIRADAS EN FRIO SIN ALEAR

DEPARTAMENTO DE CALIDAD: Certifica que el mencionado producto cumple con las especificaciones del pedido.  
QUALITY DEPARTMENT: Certify that the product fulfills the order specifications.

Fecha/Date: 24/03/2017

Firmado: Susana Fernández  
Directora de Calidad

